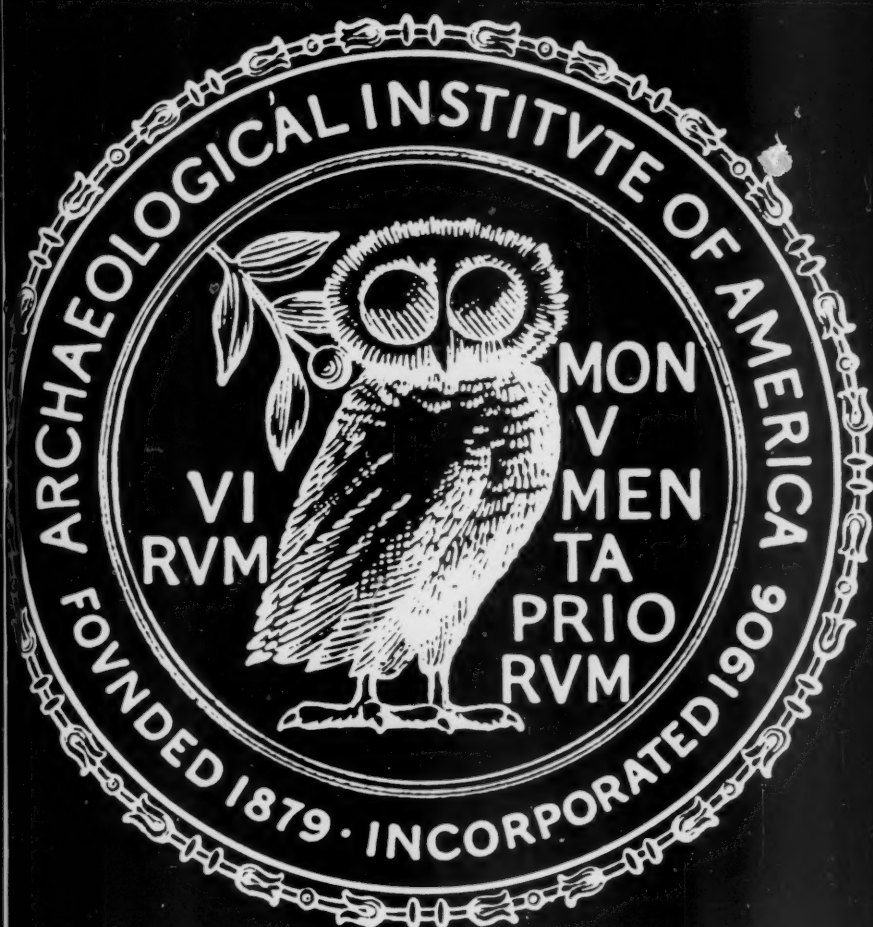


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NUMBER 4

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ARCHAEOLOGY

A MAGAZINE DEALING WITH THE ANTIQUITY OF THE WORLD

VOLUME 10 NUMBER 4

DECEMBER 1957

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Anniversary

WHEN WE LOOK BACK over the last ten years we have trouble identifying ourself with the brash fellow who once undertook to edit *ARCHAEOLOGY*.

At the end of World War II the membership of the *ARCHAEOLOGICAL INSTITUTE OF AMERICA* had dropped to an anemic 1121, and some of its loyal well-wishers were anxious that it resume its useful position in society.

At the 1945 Christmas meeting of the Institute Sterling Dow of Harvard University was elected to the presidency and set upon a bold expansion of the Institute's activities. In 1946 one of those who had been overheard deploring the Institute's inanition was effectively bridled: he was told to start issuing an archaeological newsletter, serve as archaeological consultant to *Classical Journal* editor Norman J. DeWitt, prepare annual reports of archaeological activity for the *American Year Book*, and lay plans for an illustrated quarterly, addressed to the informed layman, which, it was to be hoped, would take the place of the gone but not forgotten *Art and Archaeology* (†1934). That no one knew how to edit an illustrated quarterly, that no pattern existed for the type of article we thought our readers ought to read, that no substantial reserve of funds to cushion the inevitable first deficits was available, that some articulate members of the Institute viewed the project with dire misgivings, did not seem very disturbing; it was assumed that these matters would resolve themselves, perhaps by magic.

At the 1946 meeting the general idea of a magazine had begun to take form, and Professor and Mrs. William T. Semple of the University of Cincinnati agreed to contribute a total of \$11,600, which could be expected to cover any foreseeable operating loss during the first two years.

We named the magazine *ARCHAEOLOGY*. We spent 1947 soliciting articles, negotiating with printers, and studying type faces and the esoterics of layout.

The first issue was dated March 1948 and was mailed to all members of the Institute in January. For the cover we had chosen a striking photograph of a well known museum exhibit, which drew a cry of despair from a prominent historian of art, who considered—ahem!—that its authenticity had not been fully substantiated. We also heard from a professor of archaeology, who complained bitterly because Volume 1, Number 1, had appeared two months *ahead* of schedule, an offense we were never able to repeat.

In the meantime we had been looking enviously at the layouts of our slick competitors. We considered that the essence of artistic layout was the "run-around," which is a block of type more or less than a full column in width, set so as to accommodate an illustration less or more than a column in width. Any printer will gladly, for an extra charge, re-set already composed type to fit illustrations of random size or shape. On the scale that we proposed to do it (e.g., in Volume 3, No. 2), this would cost us eleven or twelve additional hundred dollars per issue, a sum we had neither means nor intention of paying. Instead, we counted lines and marked copy to be pre-set to fit the illustrations. This put the printer as well as the editor to a good deal of trouble, but we achieved at negligible cost an air of affluence totally incompatible with our modest circumstances.

Some societies enrolled new members. A few Annual Members became Sustaining Members so as to receive both *The American Journal of Archaeology* and *ARCHAEOLOGY*. A few took out Life Memberships. We also accepted annual subscriptions, and some subscribers became members. Membership be-

gan to grow. Expenses of printing and engraving increased, but so did the magazine's income.

We did not qualify at once for second-class mailing, because we wanted to be free to enclose leaflets, subscription blanks, announcements, and other advertising matter, so we used third-class privileges. We stuffed the envelopes in the office of the Classics Department of Washington Square College—members of the department who had no personal stake in *ARCHAEOLOGY*'s success quickly learned that the sooner the mailing was completed the sooner they could have their desks back; we divided them by states and cities, marked and tied the packages, and sent them to the post office in a university truck, until the driver rebelled, after which kind friends and taxis came to our aid. Unsympathetic postal officials once observed that we had inserted too much advertising even for the elastic provisions of third-class mailing, and held us to the unhappy choice of removing the offending matter or paying a lot more postage.

The correspondence got out of hand and our colleague Lionel Casson took on the job of business manager. We acted as our own advertising manager, and you have only to look at the first issues to believe how unsuccessful we were.

When other duties permitted, we used to reflect about editorial policy. We had decided much earlier that all areas and chronological periods would be equal in our eyes. We published articles on laundering ancient textiles, Moravian buildings in Bethlehem (Pennsylvania), table-top archaeology, Atlantis, Byzantine coins, Chinese mirrors, Greek Revival architecture, the English alphabet, Mochica murals, physical anthropology, cleaning bronzes, the Time Capsule, Indian masks, Bronze Age clothing in Denmark, El Greco, exhibition techniques, Bosra, postage

stamps, Gnostic papyri, the Newport Tower (this correspondence would be going on today if we had not abruptly decided that our readers had had enough), Star Carr, archaeological photography, letters from William Bell Dinsmoor and O. G. S. Crawford, and occasional verse. On the cover of the Winter 1948 issue we printed, in Christmas green, a reconstruction of a palaeobotanical specimen, a Cretaceous tree fern, which we mistakenly expected would appeal to archaeologists. We learned an important sociological phenomenon, that criticism is essentially negative; the subscriber who disapproves of something he has read sits down and addresses an ultimatum to the editor, while he who approves stands mute. Membership in the Institute rose again toward pre-war figures, to 2111 in 1949, and subscriptions continued to grow; but the day came when we no longer could bear to open our mail, and Gladys Weinberg assumed the editorship.

ARCHAEOLOGY is ten years old today, and cheerfully facing its second decade, a tribute to the vision of Professor and Mrs. Semple and the unflinching resolution of Mrs. Weinberg. But we can spell out in a little more detail what *ARCHAEOLOGY* has done and proposes to do. It has introduced some notion of what archaeology is really about to many thousands of people who would otherwise have depended on Sunday supplements and picture weeklies; and it has made itself a landmark in the area of public relations, a model of what a learned society can do when it sets out to explain to the public what it does with funds which, in the final accounting, are derived from the public. The members of the Institute who have supported it may be proud of what *ARCHAEOLOGY* has done in ten years. May they be prouder still in the next ten.

J. J.

A DECADE OF DISCOVERY

1948-1957

AS WE REVIEW THE DECADE just concluded, we are impressed with the amount of work which archaeologists have accomplished, at home as well as in the field, and at the number of important discoveries which have been made. In 1948, when this magazine began its existence, the world had hardly returned to normal after the great war, many archaeologists had only recently become accustomed once more to civilian clothes, and in most countries field work was still impracticable or actually forbidden.

It would be incorrect to say that the world has even yet returned to a normal state—at least we are reluctant to concede that today's conditions are normal—but archaeologists are practical people with a sense of urgency, and during these years they have not been marking time, even though the state of the world is not too propitious for their activities.

In view of the great progress made during this decade, we felt that it would be interesting to present a review of what has actually been done. The result is the fourteen summaries which follow, each contributed by an authority in his or her field. For convenience the material is arranged geographically, although some of the achievements noted cannot be confined within such boundaries. For example, one of the great discoveries of the decade is Willard F. Libby's radiocarbon dating, and this method is applicable everywhere. It will at once be apparent that the summaries presented here do not offer a complete picture; important areas of the world are entirely omitted or treated inadequately. This is not the fault of the contributors but of the editor, who failed to allow sufficient time to secure the material. Also the editor's responsibility is the severe condensation of the reports, in order to leave room for other articles. Almost every contributor registered indignation at the restrictions of space which were imposed. To them and to our readers alike we offer sincere apologies.

Despite these shortcomings a review of this sort seems well worth presenting. Throughout the summaries certain new trends can be noted. The principle of digging for knowledge, not for treasure, is now definitely established. If, in spite of this, treasure persists in appearing, that is the digger's reward. During these years attention has been drawn to areas hitherto neglected, and now the most modern methods are being used to elucidate their history. Most characteristic of these ten years, however, is the emphasis on salvage—in the face of dam-building, road-building and construction of all sorts. Archaeologists have been racing to keep up with the opportunities offered them. Salvage archaeology is not the most desirable kind of digging; the remarkable thing is that the need for it is now fully recognized and that it is encouraged by governmental and private agencies.

In closing, we may say that we hope the studies and discoveries recorded here will serve to remind us how large and how interesting our shrinking world still is, how much we have learned, and how far we have yet to go in penetrating the secrets of our remarkable history.

U.S.
by Ric

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Excavator salvaging materials exposed by a dirt-loading machine near Table Rock Dam site, Missouri. Photograph courtesy University of Missouri.

U.S.A.

by Richard B. Woodbury

THE PAST DECADE has been one of intense archaeological activity in the United States, and a flood of detailed information is now at hand from most parts of the country. In analyzing this activity, it is apparent that emphasis has shifted from the spectacular and unique to a search for regularities or cultural patterns, with interest focusing not on the specimen but on inference concerning the behavior of its maker. This attitude is reflected in the extension of careful field work to areas and periods hitherto neglected for the paucity or simplicity of their remains. It also explains the current emphasis on systems of classification and sequences of definable culture complexes. Therefore, the most significant recent events in archaeological research in the United States have been ideas, not particular discoveries. The very abundance of our data is forcing a search for better ways to order and interpret it.

The accelerated pace of field work in recent years owes much to the crisis brought on by federal dam building. Along many major streams such as the Columbia and the Missouri, and along many more minor ones, nearly every site is now or will soon be permanently under water. A large-scale program, administered by the Smithsonian Institution and carried out with both federal and private funds, has enlisted the cooperation of many institutions and individuals. As a result, important areas have received a more intensive and systematic study than ever before.

More recently there has been successful salvage work on a large scale of sites on pipeline rights-of-way, and there is growing public recognition that unavoidable destruction of historic or prehistoric sites should be accompanied by careful salvage work.

The single most important archaeological event of the past decade in the United States is the development of

radiocarbon dating, a by-product of atomic studies. In spite of difficulties of laboratory processing and in securing reliable samples in convincing association with cultural remains, a great number of dates have been obtained and many local sequences worked out with a precision never before obtainable. It is now generally recognized that hunting and food-gathering economies, with many distinctive local variations, existed over most of the country at least ten thousand years ago, and that settled village life began much earlier than had previously been guessed.

It is in the study of the early hunting cultures that some of the greatest advances have been made. Instead of a simple lumping of most remains as "Folsomoid" there are now discernible and partly defined many distinctive cultural patterns, each with its own range in time and space. Furthermore, it now appears probable that groups which lived mostly by gathering plant foods date back about as far as do big game hunters.

Although many private institutions have vigorously continued their activities, an ever-increasing proportion of research in the United States is accomplished with public funds. This trend is evident in other disciplines such as medicine, geology and engineering. We are still far from achieving, however, the sense of public responsibility for prehistoric remains that obtains in many other countries. Irresponsible private looting goes on unchecked in many parts of the country. The total amount of public funds for archaeology—federal, state, county or municipal—is still pitifully small. Nevertheless, it augurs well for the coming decade that both the rescue of sites threatened with destruction and the interpretation of excavated data in broader cultural and historical terms are becoming matters of great concern to increasing numbers of people.



Mask of jade found in the sarcophagus in the pyramid tomb discovered by Alberto Ruz beneath the so-called Temple of the Inscriptions, Palenque, Mexico.

MESOAMERICA

by William R. Coe

THIS LAST DECADE has seen a shift in emphasis from research on Classic period achievements to keen concern with analyses of local Pre-Classic manifestations. Also the Post-Classic era, once largely a documentary interest, has increasingly engaged the dirt archaeologist.

Though persistently remote from all that followed in time, the existence of an Early Man horizon has now surely been demonstrated. The original Tepexpan find has been followed by two others at nearby Santa Isabel Iztapan. Artifacts show primarily northern relationships (e.g., Scottsbluff and Angostura), though an obsidian flake-blade suggests something basically Mesoamerican. The "Chalco Complex" of de Terra remains nebulous, and thus the long span between such Early Man sites and those with pottery remains unfilled. But MacNeish's important work in Tamaulipas provides valuable insight.

Carbon 14 dates indicate that Pre-Classic cultures, from the Guatemala Valley to the Valley of Mexico, were well established by the middle of the second millennium B.C. La Venta, Tlatilco and the middle Pre-

SOUTH AMERICA

by J. Alden Mason

WHILE THERE HAS BEEN no dearth of field work in South America, no spectacular discoveries have been made except that of the Inca child "mummy" found on a Chilean mountain top at a height of about 18,000 feet. The Cuzco earthquake of 1950 revealed some walls of fine Inca masonry by shaking off the veneer of the Colonial period.

In the field of Ancient Man the most important discovery was in El Jobo in Venezuela, with a lithic complex of Palaeo-Indian aspect much resembling some of the implements found with the second Santa Isabel Iztapán mammoth in Mexico and those from Ayampitín in central Argentina, for which a radiocarbon age of 7070 years has been determined. Studies at the Lagoa Santa caves of Minas Gerais in Brazil suggest that the great age which was formerly ascribed to the skeletal material found here is doubtful.

Pre-ceramic sites have been found in a number of scattered places, such as at Loíza in Puerto Rico, Cerro

Mangote in Panama, Manicuaré in Venezuela, a shell heap in Parana, Brazil, several places in Argentina and some south of La Serena in Chile. The lithic industries of the first three bear a close resemblance to that of Monagrillo, a Formative early-pottery site in Panama. Momil in the Sinú Valley, Colombia, is another Formative period site. In the region of Guayaquil, Ecuador, important excavations revealed an occupation of Formative period with pottery types strongly resembling those of Tlatilco in Mexico and Chavín in Peru, and demonstrating a surprisingly close resemblance between these three widely separated cultures at that period.

One of the marked tendencies of the decade was the awakening of interest in the archaeology of the tropical forests and the lowlands—the Antilles, Venezuela, the Guianas, Brazil, Uruguay and Argentina, even to Patagonia. Researches in the northeast were the most important. Elaborate ceramics are found only on the Amazon, where they seem to have been intrusive from the

Classic Guatemalan phases are rich, outstanding representatives of an era that anticipated and perhaps partly surpassed that which followed. Spinden's "Archaic Hypothesis" came to be revitalized in various respects by Porter, Willey and others; we now find ourselves dealing with a hemispherically broad Formative period, with implications of north-to-south diffusion.

The Post-Classic period was investigated at such key spots as Zaculeu, Mixco Viejo, the Yucatan East Coast, the lower and middle Gulf Coast areas, Yagul and, most important, Tula. The long Carnegie program concluded with an intensive study of Mayapan. Militarism and urbanism have become important topics in reports on sites of this period.

Classic period remains encountered during the decade were often magnificent. The incomparable Bonampak murals were published. Ruz's excavation of the Temple of the Inscriptions at Palenque, with its unique tomb, justifiably received world-wide attention. Work continued at the key Mexican sites of Monte Alban and

Teotihuacan. Excavations were begun at Tikal. Interest in British Honduras was renewed with the work of Satterthwaite, Anderson and Willey; the latter spent several seasons in a long-needed settlement pattern study.

The northern periphery was worked principally by J. Charles Kelley (in Durango), while sites in Central America were excavated by Termer, Haberland, Lothrop, Canby and Willey. Nevertheless the great area between Copan and the Canal Zone remains largely obscure. Surely in the near future more and more interest will center on this critical area.

In short, ten years have seen the advent of the Carbon 14 technique and its somewhat equivocal results, the validation of Early Man in Mesoamerica, widespread Pre-Classic excavations with subsequent broadening of interpretative perspective, spectacular Classic period discoveries, and important excavations and theoretical interest in Post-Classic achievements. It should be noted that during this decade the problem of Maya-Christian correlation has grown no less perplexing.

higher cultures to the west; elsewhere there are small sites with simple ceramics, having slight temporal depth and showing little cultural change. Pottery-making was apparently of relatively late introduction, ca. A.D. 500. The results seem to discredit Steward's hypothesis of the origin of the Tropical Forest culture from the Circum-Caribbean complex.

As usual, most of the investigations were in the western highlands and on the Pacific Coast. It was found that the Chibcha "Empire" of Colombia had a short and late occupation with small villages and small population. Inca roads were located and intensively studied; some relay stations and stopping points were identified. The center of the Tiahuanaco influence was determined to be probably at Huari, certainly not at Tiahuanaco itself. The Nazca culture, it is now known, was preceded by a much longer period of Paracas type. There seems to be no chronological basis for any distinction between Paracas Cavernas and Necropolis.



Wall of coursed masonry in Cuzco, Peru, dating from the Inca period. This excellent masonry was accidentally uncovered by the earthquake of 1950. Photograph Guillen.

A DECADE OF DISCOVERY *continued*

PACIFIC

by Alexander Spoehr

COMPARED WITH that of continental regions where archaeological work has long been pursued, the prehistory of the immense Pacific island area of Polynesia, Micronesia and Melanesia is little known. Prior to World War II, deductions concerning the prehistory of the islands were based primarily on the study of the languages and cultures of living islanders. Only for Polynesia was there a series of published archaeological reports, and these dealt principally with surface finds. Valuable as these reports are, the kind of painstaking excavations demanded today was almost absent.

Pacific islands archaeology is now on the threshold of a new era. Excavations which pay due attention to the application of stratigraphic techniques either have been completed, are under way or are planned. One can predict that another five years of field work will reveal Pacific prehistory in a manner never possible before.

Where has this recent work taken place? The only two

areas which contain institutional centers supporting archaeological field work are New Zealand and Hawaii. In each, work is proceeding apace. In New Zealand the work of Duff, Golson and their colleagues is clarifying the early period of Maori occupation, when the now extinct giant Moa bird was so extensively hunted. In Hawaii, Bishop Museum's Hawaiian Archaeological Program, under the direction of Emory, is finally putting Hawaiian prehistory on a firm basis. When the outline of the past is established in these two areas, it will then be possible to determine their relations with the nuclear area of eastern Polynesia centering in Tahiti.

Other excavations have been conducted in remote areas. Edward Gifford has pursued excavations in Fiji, Yap and, with his associate, Shutler, New Caledonia. Osborne has worked in the Palau Islands and Spoehr in the Marianas. Shapiro and Suggs have commenced on the Marquesas. Heyerdahl has produced an interesting report on the Galapagos and, with a group of associates, has worked intensively on Easter Island and other islands in eastern Polynesia. Golson is working in Tonga and Western Samoa. When all this work is published,

CHINA

by R. C. Rudolph

ALTHOUGH A MAJOR RECONNAISSANCE of Neolithic sites in northwest China was carried out in 1948, and an extremely important document for art history—a painting on silk from about 400 B.C.—was found at Ch'ang-sha early in 1949, archaeological activity during these two years was almost at a standstill because of the civil war that ended with the taking over of the entire mainland by the Communist regime in 1949. Since their establishment the Communists have shown great enthusiasm for bringing to light the material remains of China's magnificent past. Not only have there been many scientific excavations at known sites, but there have also been an astonishing number of accidental discoveries, owing to the numerous public works projects undertaken by the new regime. Publications, both popular and technical, have kept pace with the finds, and there is now a large body of well illustrated archaeological literature.

In prehistoric archaeology discoveries have been made near Peking at the Palaeolithic site of Chou-k'ou-tien, famous for the *Sinanthropus pekinensis* finds of thirty

years ago. More important was the find of a fossilized human skull in Upper Pleistocene alluvial deposits more than a thousand miles to the southwest, in Szechwan province. A number of new Neolithic sites—one Chinese source says three hundred—have been found and some have been excavated, while surface collections were made at others. Perhaps the most important Neolithic site was discovered while excavating for foundations of buildings near Sian in Shensi Province. Systematic digging showed this to be a complete Neolithic village. Other finds have been made in Fukien and Kwangtung provinces, south of the better known northern areas.

In 1950 excavations were again conducted at the royal cemetery near Anyang which was found in 1934. This, the earliest known historical site, was once a capital of the Shang-Yin Dynasty. As in the earlier finds, there were many decapitated human sacrificial victims associated with the royal burials. The largest tomb contained numerous articles of bone, bronze, jade, stone and pottery. Besides discoveries in Honan province, the center of Shang culture, other significant Shang finds were made in Ch'i-shan county in Shensi province.

One of the most important finds dating from the Chou Dynasty (eleventh-third centuries B.C.) was a

we shall be immensely advanced over our previous state, when only speculation was possible.

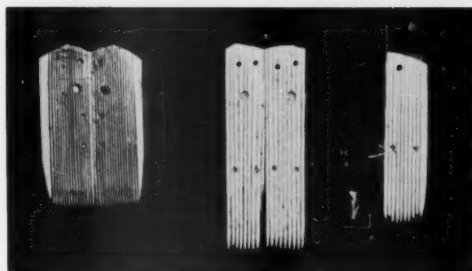
Chronology is at the heart of archaeology. Though radiocarbon dates are still too few to allow much inference regarding the chronology of the Pacific past, it does appear that the Pacific islands were settled much earlier than was previously thought. The earliest date from New Caledonia, at the end of the Melanesian arc, is 847 B.C.; from western Micronesia there is a 1527 B.C. date from the Marianas; and from Fiji we have a 46 B.C. date. At the same time, the settling of the islands of Micronesia and Polynesia appears to have covered millennia rather than centuries. Between the Marianas date just mentioned and the earliest date from Hawaii, A.D. 1004, is a span covering over two thousand years.

Two final points should be mentioned. One is that, in the Pacific, archaeology and ethnology are closely joined. The second point is that a major ultimate goal of Pacific islands archaeology is to determine the prehistoric relations of the islands to those of Malaysia and to the Asiatic mainland in a single coherent chapter of Old World prehistory.

tomb mound, originally covering seven thousand square yards, found in Hui-hsien, some fifty miles southwest of Anyang. The three large tomb pits here had been plundered in the past but still contained much material of value. A large pit in a cemetery at Liu-li-ko in the same district contained the remains of nineteen chariots dating from the latter part of this period. The Chinese are thought to have been the first to manufacture cast iron, and the discovery (in Hsing-lung district, Jehol province) of inscribed molds for making iron agricultural implements lends weight to this claim.

About two thousand tombs dating from Han times (206 B.C.-A.D. 220) are said to have been opened, yielding such objects as Ordos bronzes (in Inner Mongolia) and large bronze drums (in Yunnan). In royal tombs of the early Han period opened at Ch'ang-sha some of the unusual finds were gold ingots, long iron swords, wooden writing slips and a wooden model of a boat.

Many finds important for subsequent periods cannot be enumerated here. In conclusion, it may be said that during this decade tens of thousands of objects, many of prime importance, have been recovered from thousands of excavations, many of which were carried out under favorable conditions.

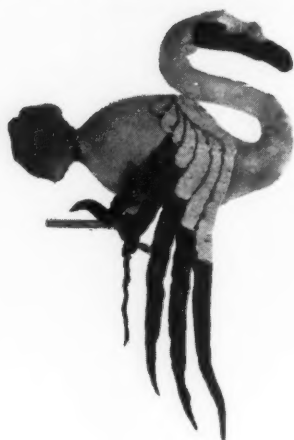


Above: Drawing of a tattooed Hawaiian by Webber, the artist with Captain Cook's expedition in 1779. Below: Some prehistoric Hawaiian tattoo needles, found in a cave on Oahu. Bishop Museum photograph.



Bronze animal head inlaid with gold and silver, which was found in a tomb at Hui-hsien. Chou Dynasty.

A DECADE OF DISCOVERY *continued*



Swan made of colored felt. Found in a burial mound at Pazyryk, Siberia. Courtesy Hermitage Museum, Leningrad.

U.S.S.R.

by Richard N. Frye

IT IS IMPOSSIBLE HERE to do more than mention the important discoveries made in Soviet archaeology since 1947. The publications alone would make a bibliographical volume, and it would be difficult if not invidious to rate excavations in order of importance.

To start with historic archaeology in the smaller republics: in Armenia probably the most important excavations were conducted by B. B. Piotrovsky at Karmir Blur, bringing to light remains and inscriptions of the Urartu period of Transcaucasian history. In Georgia the excavations at Mtskheta, ancient capital of Georgia, have uncovered ancient and mediaeval remains.

In Turkmenistan have been found Classical statues, rhytons and inscriptions on ostraca from Nissa, the Par-

TURKEY

by Machteld J. Mellink

THE GREAT DISCOVERIES in Turkey during the years 1948-57 concern the beginnings of history in this area. Asia Minor, interesting enough for its own cultural development from Stone Age to Classical times, has additional responsibilities to archaeologists as a bridge between Greece and the "Fertile Crescent."



Magnificent bronze situla in the form of a lion's head—one of many valuable objects found in the royal tomb excavated in 1957 at Gordion.

thian capital. Prof. M. E. Masson, dean of Soviet archaeologists, directed this and many other excavations in Central Asia.

In Panjikent, Tadzik S.S.R., the discovery of sixth-century wall paintings has intrigued the art world. In the Kara Kum desert S. P. Tolstov has continued his excavations in ancient Khorezmia, with pre-Islamic epigraphic and artistic finds of great importance. A. N. Bernshtam has recreated the early cultural history of the Turks in his excavation of *kurgans* in Kirghizia.

From Pazyryk in Siberia, S. I. Rudenko has enriched the Hermitage Museum with the oldest carpet in the world and with fabulous felt objects of the Hunnic nomads. In Russia itself, the excavations at mediaeval Novgorod, with the discovery of writing on birch bark, have changed Russian history of this period. Finally, Classical archaeologists will find the Soviet excavations at dozens of sites in the Bosporan kingdom, such as

Olbia and Tiritaka, and others of the Scythian and Classical periods in general, an important source of information for ancient history.

Turning to prehistory, one may be discouraged at the volume of work just on Palaeolithic and Neolithic sites in the Soviet Union. A recent striking discovery was that of a Mousterian grave in the Crimea, in 1953. The continuing work of T. S. Passek on various Tripolje sites, as well as publication of the rich results of Kuftin's work at Trialeti in the Caucasus, belongs to these last ten years.

The all-Union Committee on Archaeology of the Academy of Science has a large task in coordinating activities in the U.S.S.R. The work in general is efficient; staffs are specialized and competent, and resources are impressive (Tolstov uses several airplanes on his expeditions). One may expect interesting and impressive results in the next decade.

At Kültepe near Kayseri, where Hrozný, the decipherer of Hittite, had gathered thousands of cuneiform "Cappadocian" tablets without paying due attention to their archaeological context, a Turkish expedition under Professors Tahsin and Nimet Özgüç is creating order out of chaos. Since 1948 to the present year their annual campaigns have been symbolic of the modern spirit in Turkish archaeology. Their analysis of stratification in the outlying merchants' houses and cuneiform archives is as fundamental to the history of Asia Minor after 2000 B.C. as their discoveries on the central city mound where the name of Anitta, a shadowy Old Hittite king, was proved to belong to historical and stratigraphical reality.

The capital of the Hittite land, Boğazköy-Hattušaš, is still in the competent hands of a German expedition. The citadel is almost completely explored, and annual finds of statuettes, seals and tablets continually add to our knowledge of Hittite culture at the top level. A Turkish expedition at Karahüyük near Konya and the British enterprise at Beycesultan in the Maeander valley are contributing greatly to our understanding of the crucial phase when the Hittites and other Indo-European immigrants were taking over control of the peninsula from the Early Bronze Age population.

As for contact with the Mycenaean Greeks, Miletus is beginning to produce more evidence since the resumption of excavations in 1955. The upheavals of the early Iron Age and the outcome of a regrouping of forces in

Asia Minor are under investigation at Gordion, Xanthos and Karatepe. At Gordion the Pennsylvania University Museum expedition is putting the Phrygians in a spectacular limelight, showing that their Oriental connections are no less respectable than their goodwill at Delphi. We illustrate the striking lion's head situla found in the royal tomb excavated in 1957. Its counterparts are to be seen on the walls of Sargon's palace in Khorsabad where servants are dipping such cups into cauldrons. At Xanthos the French have been exploring the capital of mysterious Lycia, while an expedition of Istanbul University is continuing work at the site of Karatepe in the Taurus mountains, a citadel with bilingual texts (hieroglyphic Hittite and Phoenician) and weirdly hybrid sculptures.

Classical and Hellenistic investigations are no less prominent. In the East, Nimrud Dağ and its set of half-classicized sculptural superlatives have lured an American expedition into the mountains. Along the Pamphylian and Ionian coast, many sites have been subjected to further digging: Perge and Side, Klaros, Ephesus, Old Smyrna, Kyme, Phocaea, Daskyleion, Cyzicus, to list the major names. We single out two discoveries: a beautiful fourth century bronze, close relative to the Demeter of Knidos, fished out of the sea near Halicarnassus; and a striking architectural monument—the oracle temple of Apollo of Klaros—a Doric building and Greek shrine worthy of the god who was held in esteem by both Greeks and Anatolians.

A DECADE OF DISCOVERY *continued*



Fragments of Samuel, the earliest Qumran manuscript, third century B.C. Photograph courtesy of Palestine Museum.

NEAR EAST

by Linda S. Braidwood

IN THE NEAR EAST the post-war years mark a new and healthy trend. Problem-oriented excavation is now the vogue, rather than the old-fashioned type with museum objects as its primary goal. Some of this change in emphasis is probably due to the dwindling of private resources available for archaeological work; another factor is the opportunity during war years to assess what was known and what were the main gaps in our knowledge.

In addition to new investigations were those which resumed old responsibilities—cases where modern techniques were needed to clarify finds of earlier days. Some excavations were of the salvage variety; others were started purely accidentally.

Political considerations have been a major factor for western archaeologists in choosing an area for excavation. Work on the important Syrian sites of Ras Shamra and Mari, for example, has had to be discontinued by the

French. It is fortunate that Iraq, a major focus of archaeological interest, welcomes foreign excavators and encourages them with a liberal antiquities law. During these years Iraq has led in archaeological activity, with Israel second.

The most obvious gaps in our knowledge were, and still are, in the prehistoric range. With on-the-spot assistance, in some cases, from geologists, zoologists and botanists, much has been learned about early man and his environment. A cave in Lebanon (Ksar 'Akil), several in Iran (Hotu and Belt) and one in Iraq (Shanidar) have provided fairly long stratified sequences which give better insight into the activities and movements of food-gatherers. Exploration of an open-air site in Iraq (Barda Balka), supplementary digging in a cave in Israel (Kebarah) and the publication of an important site in Syria (Yabrud) have added valuable information on the food-gatherers.

One open-air site in Iraq (Karim Shahr) has yielded information on incipient agriculturalists—midway between food-gatherers and established farmers. Another site in Iraq (M'lefaat), of the same kind but inhabited longer, was only briefly tested but will yield solid information. Much was already known about these people in Palestine (the Natufians); recent work in Israel (Mallaha) is revealing more about them.

Early villages have been investigated in Jordan (Jericho), Iraq (Jarmo and Hassuna-like Matarrah) and Lebanon (Byblos). More has been learned of their agriculturally more efficient successors in Iraq (Eridu) and Israel (Beersheba, Shaar Hagolan).

Civilization has not been neglected. The long-range excavations giving most information about the beginning of historic times are those in south-central Iraq (Nippur—classic Sumerian religious center) and in southern Iraq (Warka—enormous ancient Sumerian site, more secular than Nippur). There has also been a survey of ancient irrigation canal systems.

In the proto-Assyrian and Assyrian time range should be mentioned the sustained work on the large site of Nimrud in northern Iraq, the large ziggurat and complex of Elamite Choga Zanbil in southwest Iran, and the city site of biblical Hazor in Israel.

Coming to later periods, we may mention the spectacular Parthian desert fortress of Hatra (Iraq) and the discovery of a Graeco-Iranian temple complex at Surkh Kotal (Afghanistan).

Last to be mentioned—but of greatest interest—are the Dead Sea scrolls, which have led to more continuous years of systematic search, excavations and study than any other project.

EGYPT

by Bernard V. Bothmer

DURING THE PAST DECADE the Nile Valley has continued to yield some of the riches which its tombs and temples have harbored since antiquity. Yet the most important find since the end of the war is a historical document rather than an archaeological specimen. This is a large stela, found at the Amun Temple at Karnak in July 1954, which in a long hieroglyphic text relates part of the story of the war between Kamose and the Hyksos King Apophis (about 1580 B.C.) which led to the rise of Dynasty XVIII, renowned for its might and splendor.

At Sakkara the unfinished pyramid of King Sekhemkhet, probably the successor of King Zoser of Dynasty III, was discovered, and J.-Ph. Lauer completed the reconstruction of the monumental gateway to the Zoser complex, the most impressive and beautiful example of Egyptian architecture of the Archaic period. At North Sakkara a further series of tombs of Dynasties I and II has been excavated.

Early in 1947 the Bent Pyramid at Dahshur was definitively identified as having been built for King Snofru, first ruler of Dynasty IV, and subsequently the valley temple of this pyramid was located. Two life-size statues of the king came to light, greatly increasing the known group of royal sculpture from the beginning of the Old Kingdom. At the northern end of the great western cemetery at Giza several well preserved tomb chapels of Dynasty IV were uncovered; their relief decoration is very fine. An adjoining complex of fieldstone and mud has been recognized as hyena cages, a unique feature in a cemetery.

In clearance work on the south side of the First Pyramid an engineer of the Département of Antiquities, Salah Osman, came upon what turned out to be the ceiling blocks of a large rock-cut chamber housing thousands of pieces of worked wood, ropes, matting and the like, from a dismantled funerary boat of King Cheops of Dynasty IV.

Upstream at Aswan, the border town of ancient Egypt, a new series of rock tombs dating from the end of the Old Kingdom and from the Middle Kingdom were freed from debris and revealed much color decoration; together with finds made at a family sanctuary on Elephantine Island a fresh group of sculpture, reliefs and inscriptions has thus been gained which contributes much to our knowledge of the period between 2300 and 1800 B.C. in southern Upper Egypt.

Directly south of the forecourt of the Sety I temple



A princess of Dynasty XII. Head of green schist, over life size. Found in Rome in the eighteenth century, its identity remained unrecognized until recently. Courtesy Brooklyn Museum.

at Abydos a large mound of rubble has been removed, baring the remains of a royal rest house and magazine of Dynasty XIX. Labib Habachi's excavations and research in Lower Egypt have made it very likely that Avaris-Piramesu (the *Rameses* of the Old Testament) lay at Khatâ'na-Qantir in the northeastern Delta and not at Tanis or Pithom. He also contributed considerably to the history of *Rameses II*'s reign by his work at Zawiet Umm el Rakham, two hundred miles west of Alexandria, where a fortress and many inscriptions dating from the thirteenth century B.C. have been discovered.

The locality of the Ramesside gold mines, drawn on a papyrus in the Turin Museum which is generally considered the oldest map in the world, was identified in the Wadi Hammamat by G. Goyon in 1949. With a copy of the papyrus in hand, he studied the region of the desert between the Nile Valley and the Red Sea where today gold is still being mined, and he succeeded in finding nearly all the places indicated on the ancient map.

AFRICA

by Bruce Howe

THE OUTSTANDING DISCOVERIES of the past decade in Africa, exclusive of Egypt, concern all periods, from the Palaeolithic to the mediaeval. The remarkable Carbon 14 dating technique, first announced in 1950, plays an increasing role in approximating dates, especially for the early material.

Three primitive human jaws and a skull fragment associated with hand-axes and butchered animal bones were found in Lower Pleistocene (Villafranchian) lake deposits at Ternifine near Mascara, western Algeria. A similar jaw and hand-axes turned up at Casablanca. At Haua Fteah, Cyrenaican Libya, a magnificent stratified cave sequence from Middle Palaeolithic up through Neolithic and Roman times produced a Neanderthal jaw fragment from the earliest layer, with a Carbon 14 date of about 34,000 years B.P. A skull resembling Neanderthaloid Rhodesian Man was found at Hopefield, north of Capetown. Associated with hand-axes (Final Acheulean or Fauresmith) and a grasslands-savannah fauna, it is early Upper Pleistocene and dates from the start of the Gamblian Pluvial, perhaps some 50,000 years ago. At Ain Hanech, eastern Algeria, pebble tools (including stone balls) like the Oldowan of East Africa were found for the first time in North Africa with Lower Pleistocene mammals, estimated by some to be about 500,000 years old. Five superimposed Palaeolithic occupation floors by a Pleistocene lake of last (Gamblian) Pluvial times, roughly 36,000 years ago, were discovered at Kalambo Falls near Lake Tanganyika, revealing a clear sequence from Middle Stone Age (Sangoan, Fauresmith) back into full hand-axe (Later Chelles-Acheul)

horizons. In the Transvaal of South Africa pebble tools (Late Kafuan, Early Oldowan) were found *in situ* in the Lower Pleistocene Basal Older Gravels of the 200-foot terrace of the Vaal River, suggesting that tool-making occurred in South Africa contemporaneously with the Australopithecine man-apes some 500,000 years ago. In the Limeworks Cave at Makapansgat flaked pebbles which some consider artifacts were found immediately overlying the Lower Pleistocene deposit containing Australopithecine skeletal remains. Whether or not Australopithecines made tools remains undecided.

At Shaheinab (Sudan) a Neolithic hunting-fishing settlement, with no agriculture but with rare domestic animals, was uncovered. A Carbon 14 date of about 3900 B.C. makes it roughly contemporary with pre- and protodynastic Egypt, but its distinctive artifacts suggest a cultural tradition shared with the Neolithic of the Fayum and Tibesti. A full Later Stone Age sequence excavated at northeastern Rhodesian sites defined a newly discovered tool-making tradition and hunting-gathering economy. Labeled the Nachikufan culture, it comprises three stages. Little understood connections with the west, south and north exist. An uncertain date for its beginning ranges between the fifth or fourth millennium and the first millennium B.C., while its end approaches historical Bantu times. Over sixteen hundred Neolithic and later Saharan rock paintings and engravings were discovered in southern Morocco, Oran and Tassili-n-Ajjer. The last depicts Egyptian-like dress, river boats and animals which are now seen only in central African parklands.

A Punic settlement was unearthed on the island of Mogador, southern Morocco, an astonishingly southerly point on the Atlantic coast for Punic remains. A third-century B.C. Punic shrine and cemetery found well in-

GREECE

by Eugene Vanderpool

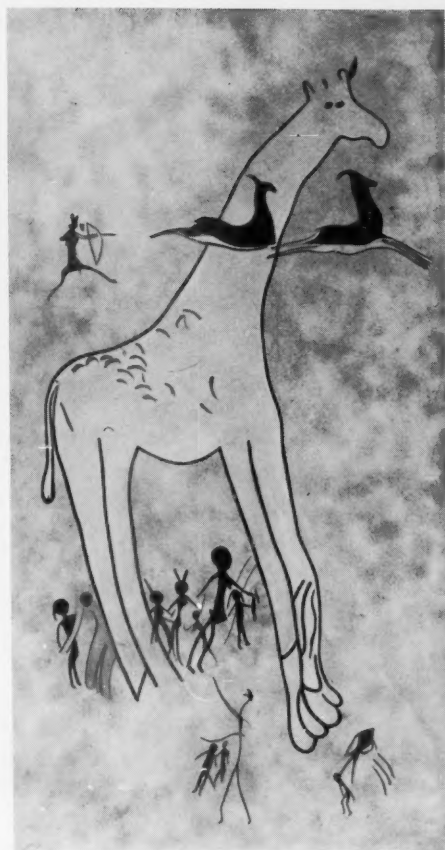
OLD EXCAVATIONS were resumed after the war and new ones undertaken throughout Greece, touching on all periods of antiquity. Much attention has been paid also to conservation and reconstruction. The principal new discoveries are here briefly described.

In Thessaly renewed investigation of Neolithic sites (by Milošević, German Institute; Theochares, Archaeological Service) has resulted in the discovery for the first time in Greece of a pre-pottery culture. The lowest levels of the mounds at Gremnos (Argissa) and at Sesklo yielded such material, and at both there are also Neolithic levels earlier than those hitherto known.

land at Constantine, Algeria, now ranks second in size and importance after Carthage. Punic levels of ancient Utica north of Tunis disclosed several seventh-fourth century B.C. tombs and a possibly earlier one, with links to Egypt, Rhodes, Samos and Asia Minor. Work in the gigantic first century A.D. forum at Hippo Regius, eastern Algeria, uncovered a unique life-sized bronze trophy simulating a conquered commander's armor and mantle. It may mark Julius Caesar's victory over Juba I in 46 B.C. when the city became Roman. Excavations at Tolmeita, in Libya, have disclosed a Roman villa and other interesting remains.

Ruins at Koumbi Saleh, French Mauretania, revealed an important mediaeval Arabo-Negro urban center. This town may be the lost eleventh-century capital of the mediaeval empire of Ghana. Sedrata, abandoned Saharan capital of schismatic Berber Ibadites in southern Algeria (tenth-eleventh centuries), yielded carved stucco decoration displaying a unique blend of Christian African, Umayyad Spanish and Mesopotamian-Persian styles. Remains traditionally associated with the mediaeval Bachwezi empire in western Uganda revealed a non-Islamic culture involving extensive earthworks irrigation, large middens, village remains and perhaps grave mounds. Certain pottery, iron and other materials suggest links with Zimbabwe, distant Meroitic influence and a date vaguely placed at A.D. 400-1400.

Starting with excavations at Gedi (twelfth-sixteenth century Arabo-African city north of Mombasa) and continuing with other work, evidence emerges for a thriving East African coastal town-culture, always nominally Islamic but progressively Africanized, based on Arab-Indian-African slave and ivory trading inland and marked by elaborately decorated buildings, many native wares and richly varied imported pottery.



Giraffe, antelope and hunters—a rock painting found in the Tassili-n-Ajjer mountains. Photograph courtesy of *The New York Times*.

The mound of Lerna, in the Argolid, excavated by J. Caskey, American School, has also yielded well stratified deposits with architectural remains illustrating the sequence of cultures from early Neolithic times through the Middle Bronze Age. The most notable architectural features are an Early Helladic palace and a system of fortification. There is important evidence of trade relations with Crete, the Cyclades, Troy and the central Balkans.

At Mycenae a second walled grave-circle, with twenty-four shaft and pit graves, was discovered by J. Papademetriou and G. Mylonas, Archaeological Society, outside the citadel. The graves, richly furnished with objects of

gold, electrum, silver, bronze, ivory and rock crystal, dated chiefly to the end of the Middle Bronze Age. A. J. B. Wace, British School, investigated houses outside the citadel and found inscribed tablets and ivories.

A large Mycenaean palace was excavated at Pylos, in Messenia, by C. W. Blegen, University of Cincinnati. Comparable to the palaces at Mycenae and Tiryns, it probably belonged to the Homeric hero, Nestor. Over one thousand clay tablets, inscribed in Linear B script, were found. Tombs in the area (Marinatos, Archaeological Society) revealed rich Mycenaean treasures. The new tablets from Mycenae and Pylos aided in the late Michael

A DECADE OF DISCOVERY *continued*

Ventris' decipherment of Linear B—the outstanding achievement of the decade—which showed the language to be an early form of Greek.

Digging deep in the palace at Phaistos, D. Levi, Italian School, revealed the existence of several earlier phases. Handsome Middle Minoan vases and important clay sealings were found.

G. Mylonas, Washington University, excavated an unusually rich cemetery at Eleusis, which was in use from the Middle Helladic period through Roman times. One group of prehistoric graves, carefully walled off in Classical times, may be those reputed to belong to the Seven Heroes who fought against Thebes. The monumental amphora found there is the finest Proto-Attic vase known.

Excavation of the Athenian Agora by the American School, begun in 1931, was continued throughout this decade under the direction of H. Thompson and brought to a climax with the reconstruction of the Stoa of Attalos as an Agora Museum. Recent investigations have clarified the history of the area and brought to light important sculpture and inscriptions, as well as an early cemetery (Mycenaean-Protogeometric) under the Agora.

The long-sought sanctuary of Poseidon at the Isthmus of Corinth was discovered by O. Broneer, University of Chicago. The temple, the precinct and remains of an early stadium have been uncovered. Parts of the *diolkos*, the ancient road for portage across the Isthmus, are now being revealed near the modern canal by N. Verdelis, Archaeological Service.

The German School, under E. Kunze, investigated the atelier at Olympia in which Pheidias made his famous gold and ivory statue of Zeus. The finds included terracotta molds in which sheets of gold could be shaped by hammering, as well as waste material—broken tools, slivers and worked fragments of bone, ivory and glass. Excavation in the stadium embankments yielded important early votive offerings, including a helmet dedicated by Miltiades.

At Aulis, the place where the Greeks sacrificed before setting out for Troy, J. Threpsiades, Archaeological Society, discovered the famous temple of Artemis.

Extensive excavations by the French School at Argos have revealed the complete orchestra circle of the theater and have disclosed important finds of various periods in the Odeum, the Roman baths, the Agora and the ceme-



ITALY

by A. W. Van Buren

THE PERIOD of two Roman *lustra*, from 1948 to 1957, started at a time when Italy was just recovering from the dislocation of World War II. The resumption of normal functioning on the part of the official archaeological agencies was accompanied by the entrance into the field of various institutions of other nations, which are now conducting their own investigations in close collaboration with the Italian government. New and improved techniques are being applied by a well equipped younger generation of workers. Significant discoveries have oc-

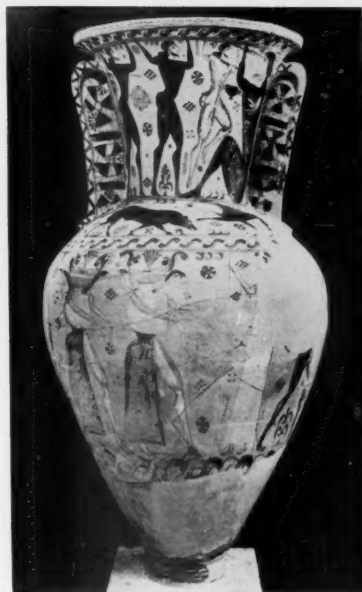
Left: Archaic metope from Sanctuary of Hera near Paestum. Herakles and Apollo struggle for the sacred tripod.

teries. At Thasos the French have almost completely cleared the ancient Agora, and at Delos they have continued to uncover the residential quarter. The "House of Hermes," set against a steep hillside, was found so well preserved that the ground floor peristyle, and also some of the upper peristyle, could be completely re-erected.

A very large tomb with a richly decorated two-story façade was uncovered by Ph. Petsas, Archaeological Society, at Lefkadia, near Naoussa, Macedonia. Among the painted figures are those of Rhadamanthos, Aiaikos and Hermes, all associated with the underworld.

Inscribed slabs from the Archilocheion in Paros were published by N. Kontoleon, Archaeological Society, and found to give the text of an oracle of Apollo recommending the foundation of a sanctuary of the Muses in which the poet Archilochos should also be honored, the beginning of a biography of Archilochos and fragments of his verse.

The excavation of the Sanctuary of the Great Gods on the island of Samothrace, begun before the war by K. Lehmann, New York University, was continued and brought to completion with the building of a museum to house the finds.



Proto-Attic amphora, nearly five feet high, found in the Eleusis cemetery. On the neck is shown the blinding of Polyphemos; below, Perseus and the Gorgons.

Left: Bronze dagger with gold-sheathed handle and inlaid designs of gold and silver, found in a Mycenaean tomb near Pylos, in southwestern Peloponnesos.

curred throughout the Italian mainland and the islands, from Ventimiglia and Genoa near the northwest border and Aquileia on the northeast frontier to the southern coast of Sicily. As always, the geographical, cultural and historical center is Rome. Among individual sites, special mention is deserved by the necropolis of Spina, Pompeii, Paestum and a group of both indigenous and Greek centers in Sicily.

The growth of the museums has kept pace with the development of exploration and excavation. The older ones have assumed a fresh lease on life. Among the entirely new museums which owe their creation to the wealth of fresh material, those at Ferrara (for the Spina finds), Paestum and Gela have assumed first rank.

A wealth of material evidence has been acquired concerning the non-Roman peoples of Italy—Ligurians, Etruscans, Lucanians and Siculans. Primitive Rome now appears in a clearer light. Investigations at the early

Roman military colonies of Cosa and Alba Fucens have opened a new page in the history of Rome's progress toward world rule. From the close of the ancient era, enriching our knowledge of early Christian antiquities, are the finds in the burial area beneath and about St. Peter's and the discovery of catacombs near the Via Latina which contain numerous wall-paintings of great interest.

The story of human habitation in the peninsula and its adjacent islands now begins in the Stone Age, and the Bronze and Early Iron Age cultures of such areas as southern Etruria, inland Lucania and the Aeolian Islands are abundantly represented. As a result, whole phases of human existence which our traditional Greek and Latin writers either ignore or merely suggest have now received a fairly full archaeological documentation, while the familiar authors themselves can be read with a clearer understanding and a better appreciation of the conditions and events which they describe.

A DECADE OF DISCOVERY *continued*

FRANCE, HOLLAND, BELGIUM

by Sigfried J. De Laet

TO ENUMERATE the main developments in archaeological research, which can only be given in brief outline, we shall list them in chronological order.

For the Palaeolithic period we note the researches of F. Bordes in the Seine basin, the excavations under H. L. Movius at the rock shelter of La Colombière and in the Abri Pataud at Les Eyzies; the discovery of a Neolithic sculpture at Angles-sur-l'Anglin by Mlle. de Saint-Mathurin and Miss D. Garrod, and of a painted cave at Rouffignac (L. R. Nougier and R. Robert). The last-named has provoked a discussion which still continues. Finally, in the Netherlands, a series of sites of the Ham-burgian culture has been discovered.

For the Mesolithic there is not much to be mentioned except the discovery at Pesse (Netherlands) of a three-meter-long fire-hollowed canoe, made of a pine trunk.

As far as the Neolithic period is concerned a great effort has been made by French archaeologists (G. Bail-loud, P. Mieg de Boofzheim) and others (such as S. Pig-gott, V. Gordon Childe and N. Sandars) to work out a

complete picture of the French Neolithic cultures and to place them anew in their European context.

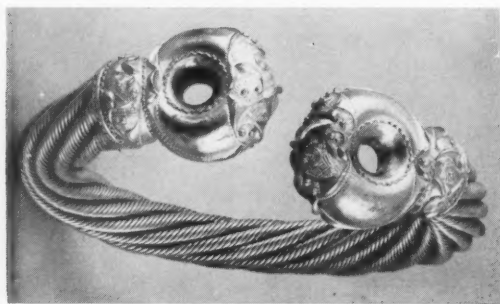
The most important Bronze Age research has been undertaken in Brittany on the one hand, and in the Netherlands and northern Belgium on the other. In the latter, a series of barrows, although furnished with rather meager grave goods, has provided important information concerning funerary ritual as well as relations between Great Britain and the Low Countries. In France impor-tant research has been carried out on the Urnfield culture.

The most spectacular Iron Age discovery is certainly that by R. Joffroy of the princely tomb at Vix, which illustrates the lively commercial relations between Gaul and the Mediterranean area around 500 B.C. In southern France interesting excavations at Marseilles and at Saint-Blaise have shed new light on Greek colonization in this region and its influence on the indigenous population.

With regard to the Roman period, effort has been ex-pended in two directions. The formation and develop-ment of towns has been studied in a number of places in France and Belgium: Lyon, Saint-Rémy, Paris, Ami-ens, Bavai, Strasbourg, Tournai, Tongres, Arlon, etc. In the Netherlands interest has centered mostly on the traces of military occupation. Systematic excavation of the

GREAT BRITAIN

by Donald B. Harden



Gold torque of fine workmanship from a hoard found at Snettisham, in Norfolk. Photograph courtesy British Museum.

POST-WAR EXCAVATIONS, in striking contrast to those of earlier days, have largely concentrated on investigating sites threatened with destruction, or on solving specific problems, rather than on digging for spectacular prizes, so that they do not often make outstanding additions to our museums or to our quota of standing monuments.

There have been exceptions, of course, though the last ten years have produced nothing that can compare with the Sutton Hoo treasure of 1939.

In prehistory Grahame Clark's work on the Mesolithic settlement at Star Carr has been outstanding; evidence is now provided for a detailed study of how these people lived ten thousand years ago. Other noteworthy excavations are Richard Atkinson's at Dorchester near Oxford and Stuart Piggott's at Cairnpapple (West Lothian), which revealed henges and other monuments of the Late Neolithic and Early Bronze Ages, and those of Atkinson, Piggott and J. F. S. Stone at Stonehenge—an instance of how much new information can be elicited from an apparently well known monument by selective trenching and painstaking recording. A by-product of this last work was the discovery on some of the Stonehenge sarsen stones of incised carvings including many axe-heads and a dagger of possible Mediterranean type—an identification which, if true, opens up many avenues of speculation about the builders and users of the monument.

Work on later Bronze Age monuments—especially barrows—has been prolific but not spectacular. For the Iron Age there is Rainbird Clarke's gold hoard from Snettisham, the greatest archaeological treasure found in Britain since the Mildenhall hoard; Mortimer Wheel-



The splendid bronze vase, more than five feet high, found at Vix, in France.

castella of Valkenburg, Vechten and Utrecht by A. E. van Giffen deserves special mention.

The Merovingian period is represented by excavation of a considerable number of cemeteries. One of the most important is at Rhenen in the Netherlands.

Finally, for the Middle Ages, there are the interesting excavations at Ghent and Antwerp. They shed new light on the origins of these two cities, which played a rôle of considerable economic and political importance during the mediaeval and modern periods.

er's work at Stanwick, where he determined at long last the real history of the well known earthwork, showing it to have been a Brigantian stronghold of the first few decades after the Roman conquest; and Elsie Clifford's at Bagendon, which revealed a Dobunnian headquarters (including a mint) that may have been the immediate precursor of nearby Corinium (Cirencester).

Of work on Roman sites there has been an infinite variety. Ian Richmond has laid bare the plan of a hitherto unknown Agricolan fortress as far north as Inchtuthil (Perthshire), and has elucidated the story of the Roman conquest of Wessex by his work at Hod Hill Camp. Others have made important discoveries on town sites such as Verulamium (St. Albans), Canterbury, Wroxeter and Great Casterton. G. W. Meates at Lullingstone—to mention only the most spectacular villa excavation—has shed new light on the Romano-British villa, revealing fine mosaics and sculptures, as well as some evidence of Christianity in Britain during the fourth century. Finally there is W. F. Grimes's work in Roman London, notably at the Mithraeum site by Walbrook and at the Cripplegate fort—a remarkable discovery of a military station which antedated, and was afterwards incorporated in, the wall-defences of the Roman city.

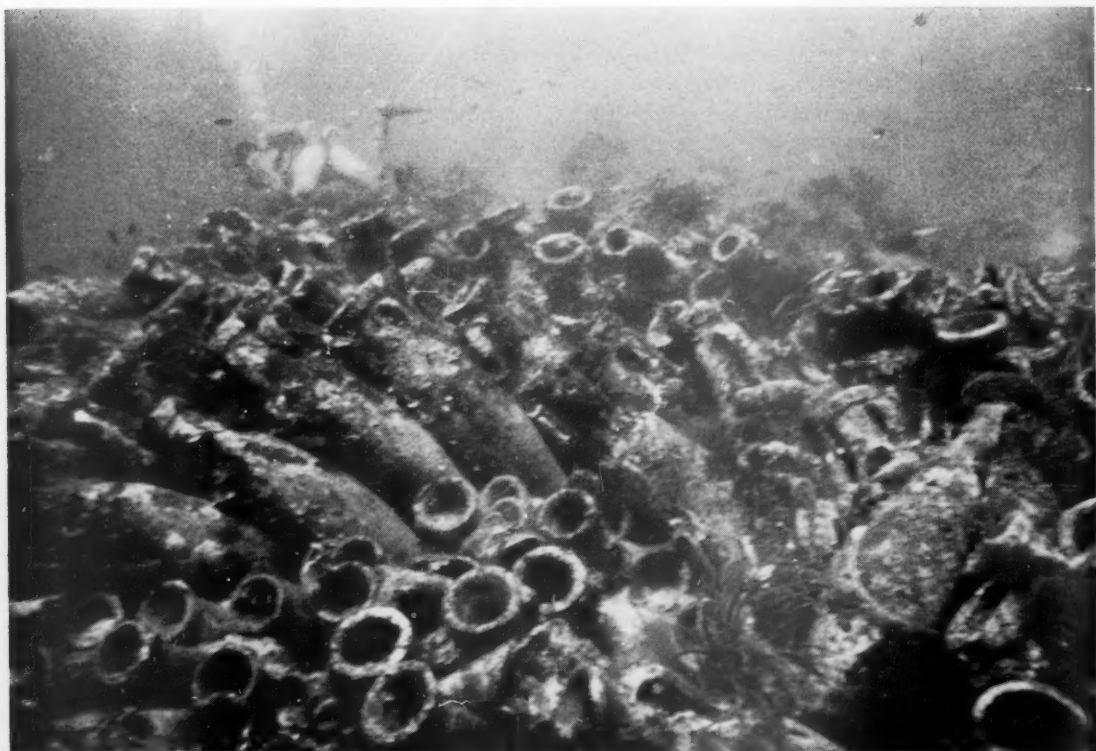
Up to 1939—apart from our knowledge of pagan

Saxon cemeteries—the Dark Ages were really dark in Britain, but latterly Dark Age archaeology, and indeed later mediaeval archaeology too, has had a great awakening. Celtic Christian sites have been studied in west Britain, Wales and Scotland; and much new evidence about Saxon dwellings and customs has come from Brian Hope-Taylor's work at the royal palace (perhaps King Edwin's) at Old Yeavinger and on another royal site at Old Windsor, and from Guy Knocker's work at Thetford. Similarly, apart from much work on castles (particularly mottes, as at Abinger) and ecclesiastical sites, there has been an upsurge of interest in deserted mediaeval villages, many thousands of which are now being charted and studied.

Much productive work has perforce gone unrecorded in this short note, and there is no room here to do more than mention J. K. S. St. Joseph's photographic air surveys, which are such a boon now to field workers and excavators. All in all, there is full reason to be satisfied with the immense advances in knowledge which post-war research in Britain has brought about, especially when we consider that improved techniques and careful choice of where and how to dig has enabled the work to be done with far less expenditure of time and money than it would have required in days gone by.

More Sea-Digging

The wreck near the Phare du Titan—a clear example of the appearance of an ancient wreck on the sea floor. Photo Y. de Rolland, Club Alpin Sous-Marin, Cannes. Courtesy F. Benoit.



Four years ago this month we published Lionel Casson's account of a new phase of archaeology—underwater exploration. In June of this year, Dr. Casson returned to the Mediterranean to see what progress had been made since his previous visit. He describes for us here the interesting results of his trip. For Dr. Casson's first article, and for a map of the Riviera showing the places mentioned, readers are referred to "Sea-Digging" in *ARCHAEOLOGY* 6 (1953) 221-230.

By Lionel Casson

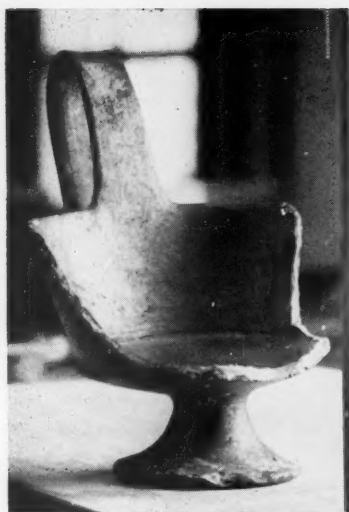
JUST BEFORE EASTER in the year 1900 a group of Greek sponge-divers, returning from their season off Tunisia, ran into a storm and took refuge in a sheltered cove on Antikythera, a little island off the south coast of Greece. To pass the time, some of the crew slipped over the side. When, a few minutes later, one reappeared lugging the bronze arm of a Greek statue, underwater archaeology was born.

Its infancy was spectacular. The divers had blundered on the wreck of an ancient ship loaded with works of art; it gave up a harvest of Greek statues that include some of Athens' National Museum's prize pieces (*ARCHAEOLOGY* 1 [1948] 179-185). A second ship, discovered some years afterward off the coast of North Africa, also turned out to be loaded with objects of art. Then a long time went by without further reports of underwater finds. In the twenties deep-sea divers fished up some superb Greek bronzes and all the earlier expectations revived. But for various reasons no further efforts were made.

Shortly after the end of World War II a new type of diving apparatus became available. It was a simple affair, consisting of little more than a mouthpiece and a couple of oxygen bottles. A diver so equipped, with a mask to shield his eyes and flippers on his feet to give him drive, could wander about the sea floor for as long as twenty minutes. Underwater secrets were no longer open only to the sponge fisherman or to the professional deep-sea diver with his expensive and clumsy equipment; any interested amateur was in a position to go after them. A new period of sea-digging opened.

The use of the new apparatus—called free-diving to distinguish it from that in which the diver is coupled by an air hose to the surface—found its most enthusiastic practitioners among the French. At first they concentrated their efforts along their own Riviera, and very soon startling reports began to come in of the discovery of numbers of Greek and Roman wrecks. Soon they and others moved farther afield, and wrecks began to turn up along the Italian Riviera, in the straits between Sardinia and Corsica, between Euboea's southern tip and the Greek mainland, and elsewhere. Unlike the first ships discovered, none of these, it turned out, were carrying works of art. They were all merchantmen loaded for the most part with those items that formed so large a part of the commerce of the Greeks and Romans—wine and oil.

We ship cargoes today in wooden tubs or barrels, paper cartons, metal drums or the like. In the world of the Greeks and Romans the standard shipping container was the amphora, a large clay jar. Long before any ancient wrecks were discovered we knew a good deal about these containers, since they turned up on land in quantities. We knew that they varied in size and shape from place to place and from century to century, and scholars had even made a good start on the difficult job of identifying which shape and size belonged to which place and time. These jars today form the key element in underwater archaeology. The wrecks that the free-divers are now locating are not at all like the mental image we commonly have of a romantic hulk lying half-buried in sand; most often all that is left of them



Cup of Etruscan bucchero ware, from a shipwreck of the sixth century B.C.



Various types of jars found in the wreck off Grand Congloué. These are now displayed in the "maritime history room" of the Musée Borély, Marseilles.

Sea-Digging *continued*

is the containers which held their cargoes—a mound of amphorae jutting up from the sea floor, or an expanse of them strewn over it. When such objects, encrusted with marine growth, are brought to a museum curator, he can hardly be blamed for not displaying them among his treasured pieces. But these prosaic jars have a vital importance of their own.

For years scholars have studied the overseas commerce of the ancient world: what ships went where and with what sort of cargoes. What could be gleaned from the writings of ancient authors and other sources they had long ago collated and studied. Their findings led them to picture a trade that, although farflung and brisk, was carried on (except for certain major routes) by smallish vessels which coasted along picking up cargo at dozens of points along the way.

The discoveries of art treasures which I mentioned at the outset and, even more, a haphazard dribble of jars from the nets of Mediterranean fishermen were a steady reminder that valuable clues to the story of ancient commerce were to be found on the sea floor. About 1950 a new epoch opened. Nino Lamboglia, the enterprising Director of Antiquities for the area along the Italian Riviera, talked a salvage expert into a hurried but intensive investigation of a wreck a fisherman had found off Albenga in 1929. About the same time the amateur free-divers began reporting their finds. And then in 1952 Commandant Jacques-Yves Cousteau, the famous

explorer of the world under the sea, started a full-scale scientific excavation of a ship that had gone down off the tiny island of Grand Congloué, just outside the harbor of Marseilles. The very first reports were revealing: neither the ship off Albenga nor that off the Grand Congloué was small or loaded with the miscellaneous merchandise that a tramp working the coasts would pick up. Both were big merchantmen, over one hundred feet long, and both were loaded with thousands of wine jars. I had long been studying the history of ancient commerce and I was convinced that these excavations demanded on-the-spot investigation. In 1953 I visited both sites and reported on what I had found. But after that, more and more enticing reports of new finds kept filtering through. This summer I decided to return for another look at the whole field.

"ANYTHING NEW? Plenty—and not all of it from the Grand Congloué." Fernand Benoit was speaking—curator of the Musée Borély, the archaeological museum at Marseilles, and a key figure in underwater archaeology today. As the Director of Antiquities for Provence and Corsica, all that the sea-diggers find falls under his jurisdiction. No museum has a better display of amphorae and the other objects that turn up in ancient wrecks than the Musée Borély, and no person knows more about them than M. Benoit.

"Here, look at this," he said, and tossed me a photo-

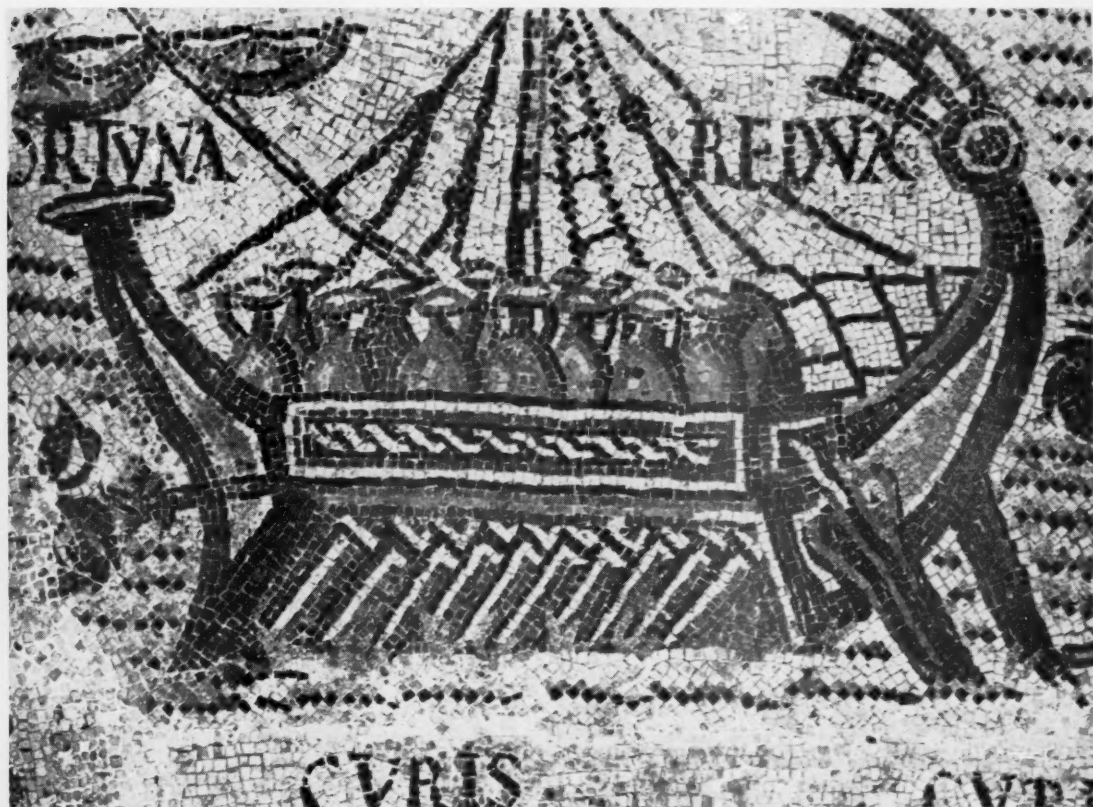
graph of a rather insignificant-looking jar. "It's an Etruscan amphora," he added with satisfaction, "It's from a wreck found off the Cap d'Antibes; there are fragments of over forty jars. Sixth century B.C.—the earliest wreck identified yet. There's no question that the Etruscans were trading in this area at that time; we've found their pottery in many places in southern Gaul. But come with me; I've got more to show you."

He led me to a room where, in a fine new display, were objects chiefly from the Grand Congloué wreck: bits of bronze ship's fittings; a box made of lead; masses of Campanian pottery. On the wall was a sketch showing the exact position of the wreck and how the divers worked on it. In the same display case was a unique find—a hoard of bronze coins that, through the action of water, had fused into one solid mass; it was fished up in the bay off Ciotat (east of Marseilles) and may have come from a wreck or may merely have been lost overboard. From there he led me to the museum's "maritime history room." One wall was covered with examples of the various types of jars from the Grand

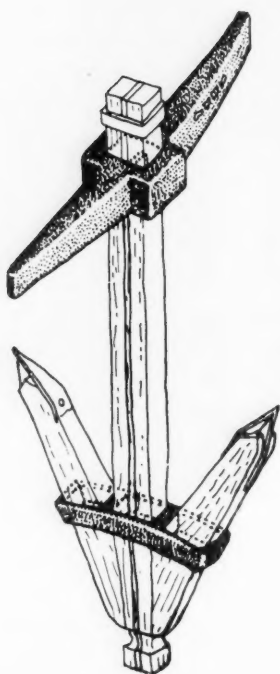
Congloué wreck; there are upwards of two thousand more in storage and perhaps several thousand more still on the sea bottom. On the other walls were specimens from other wrecks found along the Riviera. For some reason the first century B.C. is especially well represented and there were many tall slender amphorae of this period. But there were also plenty of others: wide-necked jars and narrow-necked ones, tubby jars and tall ones—almost an inventory of the many shapes we know.

All this material Benoit has arranged, analyzed and given preliminary publication. The prize, of course, is the wreck off the Grand Congloué, and a good deal more is known about it now than when I made my first visit four years ago. The chief items in her cargo were, first, a consignment of tubby Graeco-Italic amphorae which, along with a shipment of Campanian pottery, were stored in the hold and, second, a swinging load of Italic wine jars stowed upright on the deck, precisely as we see them in pictures of ancient merchantmen. Over seventeen hundred of these last have been recovered. Their insides had been smeared with resin to prevent

Mosaic from Tebessa, in North Africa, showing a Roman merchantman with a full deck-load of amphorae.



Sea-Digging *continued*



Reconstruction of Roman anchor showing lead stock and wooden shank and flukes. (Lamboglia and Benoit, *Fouilles sous-marines* . . . [Bordighera 1953] 141, fig. 32).

seepage and many still retained their plugs, a piece of cork topped by a clay stopper. On the outside of the lip they bore the name of the man who had shipped them: SES (an abbreviation for Sestius) followed by his company's device, a trident or an anchor. The Sestius family apparently had a long career in the shipping business, for amphorae bearing their name have turned up in many places dating over a considerable span of years. Almost certainly, to judge by the fabric of the jars and by the presence of Campanian pottery, the wine was shipped from South Italy and was probably intended for distribution to the interior from Marseilles. In some instances we know from whom Sestius bought the wine: the wine-seller stamped his name on the stoppers, and on a few of them can still be read L. TITI. C.F. (Lucius Titius, son of Caius).

Though the wreck off the Grand Congloué is the greatest single contributor to the Musée Borély, it is not the only one. To date Benoit has been able to confirm the existence of at least seventeen wrecks lying between Marseilles and the Italian border, ranging in time from

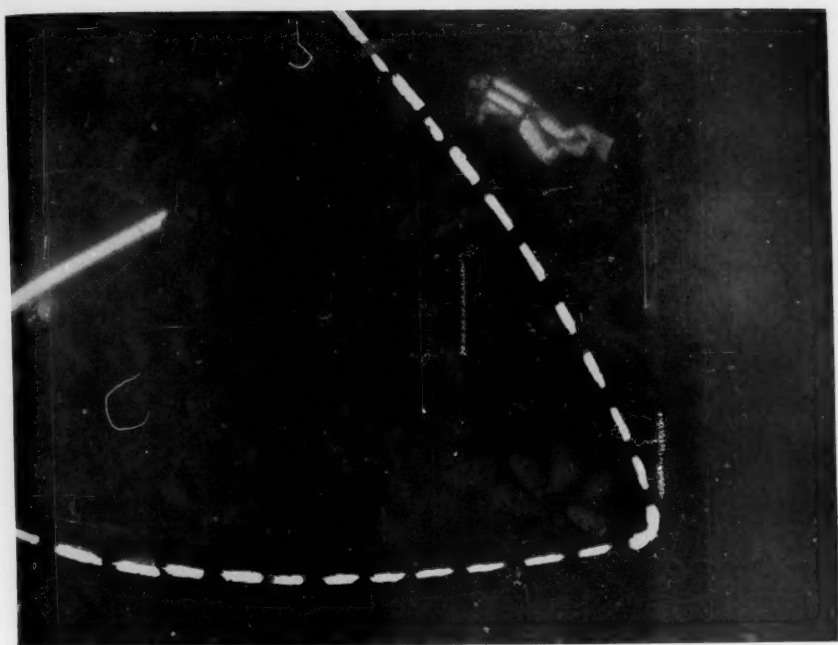
the sixth century B.C. to the fourth century of our era. But miscellaneous finds which keep coming in indicate that this figure will soon have to be raised.

On still another score Benoit had interesting progress to report. Every ancient ship carried several anchors. Divers have recovered a good many, and the museum has a rich collection. The part the divers usually find is the stock—a long heavy bar either completely of lead or a wooden core sheathed in lead, fitted to receive the shank. The shank itself and the flukes were usually of wood and are only rarely recovered. Not all the stocks are alike and one particular form has led Benoit to conclude that it was the ancients who first invented the anchor with a movable stock, a convenient feature which enables sailors to lay the whole contraption flat on the deck and out of the way when not in use. In mediaeval times it apparently went out of existence and was unknown until the British re-invented it a century ago.

"WE HAVEN'T FOUND ANYTHING startlingly new since you were here last, but we've turned up a good many interesting things." The speaker this time was Henri Broussard, Secretary of the *Club Alpin Sous-Marin* at



M. Henri Broussard stands beside the stock of the anchor from Wreck A of the *Balise de la Chrétienne*.

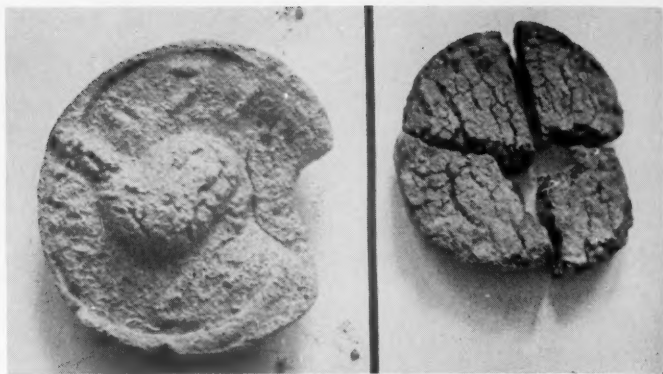


Wreck A of the *Balise de la Chrétienne*. The dotted white line shows the outline of the ship's prow, as indicated by the position of the amphorae. Photograph by H. Broussard.



A diver brings up a piece of the shaft of the anchor from Wreck A. Photograph by D. Rebikoff.

Clay stopper and cork from a jar found in Wreck A of the Balise de la Chrétienne.



Sea-Digging *continued*

Cannes. The club is the most important organization of its kind in France. All serious divers are members, and it is they who have investigated most of the wrecks along the French Riviera, as well as a good many elsewhere. M. Broussard, a skilled diver and expert underwater photographer, after a few preliminary remarks launched into one of his favorite topics: the wrecks of the Balise de la Chrétienne.

A little west of Cannes, at the point where the village of Agay rubs shoulders with Antheor, a buoy called the Balise de la Chrétienne marks a particularly dangerous spot along this rocky coast. Diving here in 1948, Broussard came across what appeared to be a field of amphorae. After a great many dives and careful investigation it was determined that there were three distinct wrecks in the vicinity.

For lack of better names the wrecks were dubbed A, B and C. Not much could be gleaned from the last two: C was carrying tubby jars which may have been used for olive oil and are probably of the second century B.C., while B held wine jars of the first century A.D. Wreck A had a good deal more to offer. Its amphorae were of the tall, slender, first century B.C. type that turns up so frequently along the Riviera. Lying on the sea floor, they outlined the shape of the vessel, and Broussard estimates that it was about 100 feet long. In 1954 the divers came upon a unique find, the stock of the ship's anchor with a piece of the wooden shank still fixed in it. This established beyond question that the vessel was a big fellow. The stock is one of the largest ever recovered, a massive piece of lead over six feet long and weighing nearly 700 pounds. The remnant of its shank was 8½ inches wide, 7 inches thick, and 33½ inches long; originally it was at least twice as long.

The vessel had been carrying a cargo of wine (al-

though a few oil jars were also found). Their stoppers had been stamped with the name of the wine-seller: M. C. LASS—probably M(arcus et) C(aius) Lass(ius). Lassius is a name that was common in the area about Naples in the first century B.C. The ship, then, like that off the Grand Congloué, had very likely been transporting a big load of South Italian wine to southern France when it came to grief. Some of the wood from the hull was recovered, notably a rib which revealed the craftsmanship of the ancient shipwright in pinning planks to frame. Pegs held the two together, and to make sure the pegs fitted snugly copper nails had been driven through them, forcing them to expand in their holes. Some tools from the ship's carpenter's chest were preserved in a curious way. Two formless chunks of corroded iron discovered in the wreck, when broken open, were found to contain perfect molds of what they had been originally: one of a hatchet, the other of an adze. Even a piece of the wooden helve of one was preserved.

WHEN SEA-DIGGING IS MENTIONED one almost automatically thinks of the French Riviera, but this region is far from having a monopoly of ancient wrecks. At least two have been identified along the Italian Riviera, the one off Albenga and another, of the second century B.C., off Pegli near Genoa. Divers have discovered that the floor of the straits between Corsica and Sardinia is strewn with jars. And of course there are wrecks in the eastern Mediterranean as well. But in this area I discovered a paradox: a good deal of the investigating must be done on land.

In 1955 a report was published that a wreck of the fifth century B.C. had been located off the island of Chios. So I stretched my itinerary to include this island. I quickly discovered that there was little more to add to



Plaster cast of an axe-head, the shape of which was preserved in a mass of iron. Found in Wreck A of the Balise de la Chrétienne.

the published notice. The wreck was in bad shape; only some fragments of jars had been recovered, just enough to prove that they were definitely of the fifth century.

This, however, was not the end of the trail on Chios. Before going there I had a long conversation in Athens with Virginia Grace, the acknowledged expert on Greek amphorae. She informed me that the wreck reported off Chios was only one of many, assured me that there was a harvest of jars to be found on the island, and gave me clues as to where to do my searching. In the little museum at Chios I came upon a helter-skelter collection of amphorae encrusted with marine growth. But outside the museum the finds were richer. The local fishermen use the dragnet, the type pulled in such a way that it brushes the bottom. It's hard on the fish—the grounds are gradually becoming exhausted—but it's wonderful for bringing up jars. The Chians prize these relics of their past: they set them out in their gardens, or use them as ornaments in their houses. Finding them is simply a matter of looking over garden walls and knocking on the doors of fishermen's houses. In one fishing village I got the impression that there was at least one jar in every home, and one house I visited had four, one adorning each room.

The varied shapes of these amphorae show that they span the centuries from the fifth century B.C. to the late Roman Empire; the waters about the island must literally teem with wrecks. But Miss Grace assures me that Chios is not unique; she has been over most of the islands of the Aegean and the eastern Mediterranean and has come across jars on practically all of them. There are clearly many, many wrecks to be found; merely to pinpoint them and explore only the most promising would require time, energy, organization and money on a staggering scale.

THUS UNDERWATER ARCHAEOLOGY has one job before it which doesn't involve sea-digging at all, namely the collating and study of all these amphorae that turn up so haphazardly. Miss Grace is doing this for the east, Benoit and Lamboglia for parts of the west. This work is, of course, far less expensive and time-consuming than sea-digging itself. Yet in a way it is almost as important, for it can help establish the date, the use and the provenience of the various shapes. Once such problems are solved, divers will be in a position to identify quickly and precisely what they discover.

The immediate future of actual underwater exploration unquestionably lies along the French and Italian Rivières. Here the sea-diggers have already accomplished enough to give a vivid picture of the nature of ancient commerce and of the ships used in it. The coastal area from Italy to Marseilles was a waterway for international commerce as early as the sixth century B.C., and by the second B.C. it was clearly the scene of traffic on a large scale. In this and the subsequent century ships one hundred feet in length or more, capable of carrying upwards of two hundred tons of cargo, traveled this route, transporting huge quantities of Italian wine—the wreck off Grand Congloué carried perhaps 15,000 or 20,000 gallons—and much Italian olive oil and pottery to the south coast of France.

We know less about succeeding centuries, but there is every chance that the sea-diggers will soon fill in this gap. Although work on the Grand Congloué wreck has virtually stopped, there is an exciting new prospect to take its place. At the northeast tip of the Ile du Levant (in the Hyères group) is a beacon called "the Titan" which warns ships away from a dangerous reef. Here was found a well preserved wreck loaded with amphorae from the age of Augustus. Many were still plugged with

Sea-Digging *continued*



The Grand Congloué with television broadcast going on.

Cousteau's divers hit the deck of the Calypso after performing for television cameras under water. Since the wreck is deep (130 feet) and the water cold they wear rubber suits. In the foreground are two jars which they excavated under the eye of the cameras.



Fisherman of the island of Chios displaying one of the four jars he owns.



day stoppers, and in some of the jars were found remains of tunny bones and of mollusks which had been preserved in fish sauce. Within the near future Phillip Tailliez, commanding officer of the *Groupe d' Etudes de Recherches Sous-Marines* attached to the naval base at Toulon, will start a full-scale investigation. His chances are bright indeed, for he has at his disposal the *Elie-Monnier*, a ship specially equipped for underwater research. There is some urgency because the wreck is easily reached and enthusiastic amateur diggers have been helping themselves to the jars.

Some of the high hopes raised earlier for underwater archaeology are probably not to be realized. When Cousteau started to investigate the Grand Congloué wreck, he talked optimistically of raising the hull itself and giving the world its first look at a Roman merchantman. This is probably not to be. One of the serious problems connected with sea-digging is the preservation of the pieces of wood that are brought up, for they deteriorate rapidly on exposure to air. At an international congress (1955) devoted to underwater archaeology a good part of one session was devoted to this topic, but no satisfactory conclusions were reached.

The technical side of underwater archaeology has made tremendous strides in the past years. Divers now have powerful lamps to illumine the work, effective suction cleaners to remove the marine growth and muck that cling to wrecks, devices to raise heavy finds to the surface. They have worked out techniques to plot the exact location of the various parts of a wreck and to set out markers so that a wreck, once found, will not have to be searched for all over again.

Underwater photography has made remarkable progress. Movies and still shots in black and white or color

record with dramatic clarity what lies on the floor of the sea. I was lucky enough to be present at a demonstration of how far the art of taking pictures under water has advanced—a live television program of sea-diggers at work on the Grand Congloué, arranged by Commandant Cousteau.

When I visited the Grand Congloué in 1953 it was the epitome of barrenness and loneliness, just an oversized naked white rock projecting above the surface of the sea. This time, as the launch rounded a point and the island came into sight, the changes were almost unbelievable. Over the spot where the wreck lay were anchored the two famous French underwater research ships, Cousteau's *Calypso* and Tailliez' *Elie-Monnier*. On one end of the island a veritable Eiffel Tower had been built; the rest was swarming with people and covered with a clutter of cables, generators, cameras and the other paraphernalia needed for a television broadcast. The broadcast was a triple-barreled affair: Cousteau had arranged to do it first in English, then in Italian, and finally in French. While the technicians, the director and other personnel did their part ashore and on deck, down on the sea floor diving-excavators worked on the wreck. Around them swam men carrying powerful lamps, and behind were the cameramen, tracking the work with their lenses. I watched the first broadcast on the spot, then raced to a set on shore to see the third on the screen. It went off without a hitch; Cousteau had attempted a daring experiment and carried it off brilliantly.

A copy of the English broadcast was made on film, and it may be shown in America. I hope it will. Its short minutes give, as no words can, a fascinating glimpse of the promise of underwater archaeology—and a sobering realization of its expense and limitations.

*Highlights of
the Spring issue of*

ARCHAEOLOGY

IOLKOS—WHENCE SAILED THE ARGONAUTS
by Demetrios Theochares

GEOLOGIC DATING IN PREHISTORY
by Herbert E. Wright

A ROMAN SPORTS CUP (illustrated in color)
by Donald B. Harden

STUDIES IN ANCIENT SOCONUSCO
by Bertha P. Dutton



1. One of the shallow mounds at Buenos Aires, Costa Rica. Such a mound contains about 150 graves.

EXCAVATIONS IN COSTA RICA AND PANAMA

By WOLFGANG HABERLAND

NEARLY ONE HUNDRED YEARS AGO, in 1859, some farmers chanced upon a gold treasure near Bugavita in Chiriquí, the westernmost province of Panama. This started a gold rush, and within a few years about 225 pounds of gold were excavated and mostly melted down, only a few pieces surviving from museum collections. Since that time illicit grave-digging has never ceased in that region, but it has gradually declined with the exhaustion of the more easily accessible cemeteries. During these operations vast quantities of pottery were also excavated, but most of it was deliberately smashed by the *buaqueros* (grave-diggers), who hoped to find gold inside the pots. The most spectacular pieces found

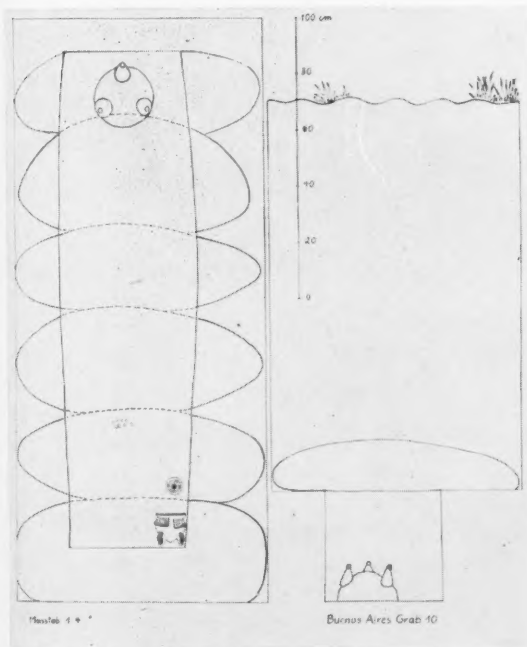
their way to museums and private collections all over the world, making Chiriquí pottery one of the best known wares at the beginning of this century. As early as 1888 William H. Holmes was able to publish his famous *Ancient Art of the Province of Chiriquí, Colombia*, based on the collection of the United States National Museum. Then, twenty-three years later, followed George Grant MacCurdy's report on Yale University's collection, *A Study of Chiriquian Antiquities*, accompanied by excellent drawings. Both works are still famous and are good examples of the thorough publication methods of their times. Unfortunately neither Holmes nor MacCurdy visited Chiriquí personally.

In succeeding years interest in Panamanian archaeology slowed down. Other parts of Latin America, especially Mexico, Peru and the Maya area absorbed the attention of archaeologists and laymen. Then came reports by Samuel K. Lothrop of fabulous discoveries at Sitio Conte in Coclé. These aroused new interest in this long-neglected part of Central America. New expeditions, like that of Lothrop in Veraguas and of Willey in the province of Herrera, opened up new fields. Last of all

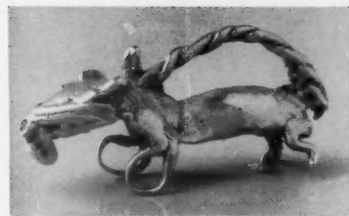
• Born in Hamburg, Germany, in 1922, the author studied at the University of Hamburg (Ph.D. 1952), and while a student assisted in excavating prehistoric sites in northern Germany. His main interest is in the archaeology of Central America, where he has spent two years (1953-55) and to which he plans to return. He is now head of the American Department of the Hamburg Museum of Ethnology. The excavations described in this article were aided by a grant from the *Deutsche Forschungsgemeinschaft* (German Research Society).

came Lothrop's preliminary descriptions of the Venado Beach culture in the Canal Zone, where excellent gold work was found. Thus interest in Panamanian archaeology has shifted gradually to the south, leaving our knowledge of Chiriquí at almost the same point where MacCurdy finished. Scarcely any grave excavated by professionals has been described and the relations of the various pottery styles have remained quite unknown. It was for these reasons that, after a long reconnaissance in El Salvador, I went to Costa Rica and Panama.

Some writers stated that the Chiriquí culture spread also to southeast Costa Rica, known as Boruca and comprising the Valle del General and adjacent regions. Actually, scarcely any excavation had been done in that area, and this opinion was based on material in private collections and descriptions given by local grave-hunters. It seemed important to find out whether this was correct or not, and so I went to Buenos Aires in the northwestern part of the valley, where large cemeteries had been reported. This little village proved to have been constructed right on top of a number of large shallow burial mounds (Figure 1) lying more or less in a row



2. Plan and section of Grave X at Buenos Aires, showing the typical construction of these graves—wide shaft, smaller chamber below, and stone roof. In this grave were found some teeth. These were the only skeletal remains discovered.



3. Gold pendant in animal form (length $\frac{3}{4}$ inch) from Grave XV, Buenos Aires.

and following roughly the steep eastern bank of the Rio Ceiba. Most of the ground was privately owned and therefore could not be touched, but by courtesy of the local authorities I was able to excavate a strip 16 x 58 feet in one of these mounds which lay on public property. Twenty-eight graves were found in this area. Despite the absence of grave markers, the graves did not overlap, and this seems to indicate that somehow the graves must have been distinguishable. With one exception all the graves were oriented roughly east-west, but no rows could be definitely recognized. The construction of all was more or less the same—a rectangular shaft was sunk into the mound, the lower portion of which was narrower and contained the burial itself. Upon the shelf formed by the narrowing of the shaft, which extended all round the grave proper, were placed large stone slabs as a cover (Figure 2). Most of these slabs are well rounded and seem to have come from the river, while others could have been quarried, as their sharp edges indicate. The quarrying would have had to be done far away, as no natural outcrop occurs in the alluvial plain around Buenos Aires. The nearest source would be the Talamasca Mountains to the north. While the roof of the grave chamber is generally constructed of stone, as we have said, the walls were simply cut into the earth. Both depth (38-70 inches) and length (29-82 inches) vary considerably. No more than three vessels were found in one grave and no stone implement could be found, possibly owing to the fact that wood of the Chontal palm was often used for implements.

A special surprise was furnished by a small grave (XV). From the first it seemed to have some curious features, for an olla had been placed on top of the stone covering, whereas in all other cases the offerings were on the floor of the grave. After removing the covering it was seen that a large Bisquit-ware bowl with three feet, placed upside down, occupied the eastern part of the grave. When earth that had sifted in during the cen-



4. Pottery from Grave X, Buenos Aires. The two vessels at left have red and black designs on a cream ground; the feet of the larger one resemble animal heads. The large bowl at the right is Bisquit ware, probably from Chiriquí.



5. Brown Incised bowl from Boca de Sabana, near Buenos Aires, in the shape of a jaguar. The head contains pellets which rattle. *Metates* of similar form are known in Chiriquí.



6. Tripod of typical Boruca style, from Sabana de San Andrés, near Buenos Aires. The elongated body, pronounced shoulder, neck-collar, and feet with openings are typical of this area. Human and animal figures on feet and handles show resemblance to Chiriquí figurines.



7. Two "Alligator ware" ollas found in Grave 2, Huacal de Chebo, Highland Chiriquí. Body and neck are red; painting is black and red on cream; the surface is highly polished.

COSTA RICA AND PANAMA *continued*

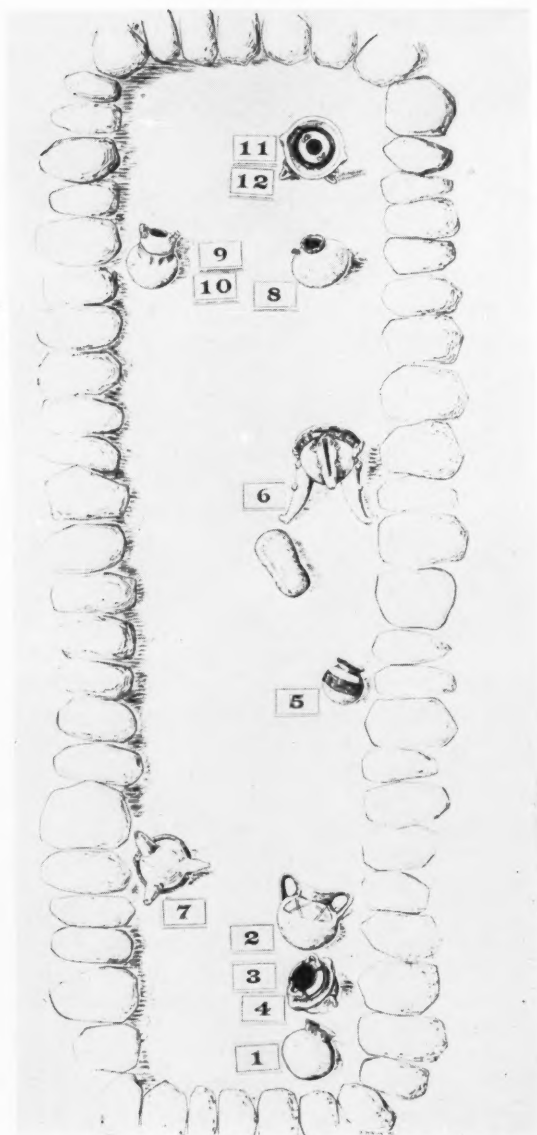


8. Red-on-Orange tripod from Grave 5, Huacal de Montelirio, Highland Chiriquí. The legs and inside of rim have red stripes on an orange ground. On top of the feet are finely executed bird figures, and there are wing motives on the outside of the rim. This vessel represents a new kind of ware.

turies was removed, there was revealed at the opposite end a small gold animal which had served as a necklace pendant (Figure 3). Although here, as in all the other graves, no skeletal material could be found, this object seems to indicate that the head of the deceased had been placed at the west. This was verified by some teeth found in Grave X, also lying at the west end. The curious distribution of the pottery vessels in Grave XV may be explained by its small size. The grave, possibly that of a child, was too small to contain all the offerings, and therefore the least valuable vessel was placed on top of the stone roof. Judging from the pottery excavated here as well as by two other collections obtained from *huacales* (cemeteries) in the vicinity of Buenos Aires (from similar graves), it seems that the aboriginal inhabitants shared certain traits with the people of the Chiriquí region—such as the Bisquit ware (Figure 4) which was probably imported from there—as well as with those of the Meseta Central of Costa Rica (whence the White-line ware was imported). In addition they also had a certain amount of pottery wholly of their own manufacture, like the Brown Incised (Figure 5) and the Red-brown ware. Other wares and forms are more closely connected with the east, like the Polychrome ware (Figure 4) and the tripod shape (Figure 6), but nevertheless represent a distinct style, easily distinguishable from that of other areas. Therefore this region seems to be akin to, but not exactly like, the Chiriquí region.

After these test excavations were finished, it was important to see what kind of graves and associated pottery could be found in the original Chiriquí area. First some excavation was done around the Valle de Santa Clara, midway between the volcano of Chiriquí (or Barú) and the border between Costa Rica and Panama, a region which should be termed "Highland Chiriquí." Here numerous graveyards are to be found, but unfortunately most of them have been so thoroughly dug up by grave robbers that scarcely one grave is still intact. Only when one sees this is it possible to imagine how much valuable scientific data has already been destroyed and to comprehend that the next few years will be crucial for the preservation of information on this important Central American culture.

Despite these difficulties eighteen graves were excavated at four different spots. In contrast to the Buenos Aires graves, the chamber could rarely be distinguished from the shaft. Stone roofing was absent; only in the upper part of the shaft one or more layers of thin, quarried slabs or rounded boulders were sometimes



9. Plan of Grave 3, La Concepción, which has stone walls on all sides. Types of pottery: Bisquit (1, 2, 8), tripods (4, 6, 12) and Red Painted ware (3, 5, 7, 9, 10, 11). The feet of one tripod (4) were missing when it was placed in the grave.

found. There was no stone masonry in walls or floors. The dissimilarity to the Buenos Aires graves was also borne out by the pottery. Not one vessel was like those at Buenos Aires. Most of the well known Chiriquí wares were found here: Bisquit, Alligator (Figure 7) and Chocolate Incised, as well as some new ones such as Red-on-Red Negative, Red-on-Orange (Figure 8) and Red-brown Appliqué. More than half the graves contained stone celts, and one had two spear points and four arrowheads. The difference between the two areas, which we had surmised when digging in Boruca, was now definitely established.

Still the question as to regional differences within Chiriquí itself, which had never been studied because of the lack of thoroughly documented material, was not yet settled. The cemeteries excavated in the Highland region were too close together to show any differences. Therefore, at the end of the expedition, ten graves were excavated in the vicinity of La Concepción, a village west of David in a region which we called "Lowland Chiriquí." First of all, we found that here grave con-



10. View of Grave 3, La Concepción, as it appeared after the pottery had been removed. Note the lowest row of boulders, placed vertically on both sides. The three upper rows were placed horizontally.

struction was similar neither to that of the Boruca region nor that of Highland Chiriquí. Although basically the same—rectangular in shape with chamber not distinguishable from shaft—here the walls were partly constructed of stone. A good example is Grave 3 (Figures 9, 10), which had all four walls made of stone, laid in four rows. The three upper rows, of flattish boulders, were placed horizontally, while the bottom row, touching the floor of the grave, was placed vertically. No real stone roof could be found, but only irregularly placed boulders which perhaps originally covered a wooden roofing which has now disappeared. Most of these graves had only two or three stone walls, the others being made of earth. Minor variations could also be seen in the roofing, where sometimes large thin slabs of a slate-like stone, probably quarried, had been used.

The pottery was generally placed at one end or in the corners, but the twelve vessels of Grave 3 were distributed all over, leaving scarcely any space for the burial. Unfortunately soil conditions here, just as in Highland Chiriquí and Boruca, were so bad that no

skeletal material was preserved. Besides pottery, the finds included celts, an arrowhead similar to the Highland type, a *mano* and a three-footed, flat *metate* without any carving. Of the various wares the Bisquit ollas and the painted tripods (Figure 11) are the only types which were also found in the vicinity of the Valle de Santa Clara. This may be due to the fact that only a few graves were excavated in each region, but on the other hand it seems to indicate that a certain degree of difference exists between these regions, tentatively labeled "Highland" and "Lowland." One may hope that further systematic excavations in Chiriquí will settle this question as well as others, such as the extent of the Boruca area and its final relationship to Chiriquí. This and further research may provide the basis for chronological studies, which have until now been completely neglected in this particular area. But speed is essential for, as we have already stated, time for these studies is running out despite the efforts toward conservation which are being made by the authorities of both Panama and Costa Rica.



11. Three tripod vessels from La Concepción, showing the various styles of hollow feet. The feet of the vessel at left rear display the fish motive; that in the left foreground has feet with owl-heads at the top; while the feet of the vessel at right are crowned by various animals. The twisted handles, which appear on all three vessels, are typical of the Chiriquí area.

PART OF THE FASCINATION of early Peruvian artifacts comes from the circumstance that there is no contemporary written language to interpret them. The twentieth century must draw its own deductions from pattern, material and technique. Such criteria assign this embroidery to the Paracas Necropolis horizon in Peru, dating it about the third century B.C.

Junius Bird* has classified the figure shown here, one of six on the fragment, as a Monkey-footed Creature. They have cat faces, forehead ornaments and trophy heads, and carry fans and batons. Their tongue appendages end in winged men, while the serrated appendages appearing from beneath their shirts have cat heads at the ends and show unfinished places for trophy heads with long hair. We have not yet discovered the original inspiration for these designs.

The ground fabric of this specimen is cotton, often used when the whole surface is to be covered with embroidery. The design and background are embroidered with alpaca. The yarns of both fibers are prepared in the same way: singles are Z-spun and two such singles are plied together in the S-direction. This is such a universal practice in Paracas that it is reasonable to suspect that certain craftsmen did the spinning while others wove and still others embroidered. Possibly designing was a separate function also. The cotton ground is green, a color obtainable by dyeing tan cotton with indigo. In Peru indigo was commonly used on cotton as well as on alpaca, though generally speaking the world over, animal fibers rather than vegetable fibers are dyed. The colors in this border were quite probably achieved with but two dyes: indigo for the blues and greens, and madder for the red and pink, since the olive, golden-tan and light gray are to be found in natural alpaca coloring.

* PARACAS FABRICS AND NAZCA NEEDLEWORK, by JUNIUS BIRD and LOUISA BELLINGER. Washington, 1954.

FIGURE FROM

As certain parts of this design have not been finished, namely the ankle bands, a band on the shirt and the places for trophy heads in the tail appendage, we are given an indication about the working methods. Apparently the figures were outlined on counted threads. This allowed all the figures to be nicely spaced, while slight variations in the weave of the ground cloth kept the repeats from looking too stereotyped. Possibly with the same object in view the figures face alternately right and left and small details of the design are quite diverse. When the outlining was finished the background and the design were filled in, care apparently being taken that like parts of any two adjacent figures were not the same color. Quite often the colors followed a set rotation from one figure to the next. This particular specimen is unusual in that no two colors follow the same sequence. Both the outlining of these figures and the filling in of design and background are worked in stem stitch. The varicolored fringe, whipped to the edge of the border, is also attached by a narrow knit-stem finish, a variation of stem stitch suited to this function.

We are faced with a paradox. We have to deal with a civilization which produced a multitude of extraordinary designs, spaced them rhythmically and gave them heightened interest by variety of color emphasis, and yet worked them with complete monotony of spinning, weaving and embroidering crafts. How can we account for such a civilization?

PERUVIAN MANTLE BORDER

By LOUISA BELLINGER

Curator, Textile Museum, Washington, D. C.



One figure from the border of an embroidered Peruvian mantle, dating from about the third century B.C. Color plate courtesy the Textile Museum, Washington, D. C.

BY N. AVIGAD



One of the three entrances to the catacomb, with a double stone door revolving on hinges. The door is flanked by two piers which originally carried an arch. Its fallen voussoirs were found in front of the door.

SARCOPHAGI AT BETH SHE'ARIM

THE CITY OF BETH SHE'ARIM in Galilee, well known as a center of Jewish learning, was a favorite burial place for pious Jews during the second, third and fourth centuries of our era.

Extensive catacombs which were cut into the soft rock of the hillsides contain hundreds of tombs. In 1955 by far the largest of all these catacombs was discovered. In many respects it differs greatly from the others. Its plan is distinctly different; Hebrew inscriptions are more numerous here, while in the other tombs Greek inscriptions were in the majority; and—last but not least—we find for the first time in Beth She'arim the extensive use of sarcophagi. In the other catacombs the bodies or the bones were placed either directly in niches cut into the walls of the rock chamber or in wooden coffins (of which generally only the iron nails remain). Moreover, our new catacomb seems to contain the largest number of sarcophagi—about 130—yet discovered in this type of ancient necropolis.

The façade of the catacomb, about forty feet long, is

built of ashlar masonry placed against the natural rock wall. It consists of three arches resting on square pillars, each with an opening leading into the cave. This arcaded façade is largely destroyed, but its molded and decorated blocks, found fallen in front of it, show the style of Roman architecture current in Palestine in the early third century A.D.

The cave itself, which is cut into the soft rock, comprises a series of vaulted halls and burial chambers. The end of the cave is now blocked by a huge heap of collapsed rock, apparently the result of an earthquake. The central hall is about 150 feet long, while another burial hall reaches a length of about 160 feet. The chambers are arched and have small niches cut in their walls, but most of the burials were in sarcophagi. The average size of the sarcophagi is nine feet in length and five feet in height, including the lid; each weighs three to five tons.

When we entered the cave we found that all the sarcophagi had been forced open and looted by grave robbers. Many clay lamps dating from the early Arab period, which had been brought by the robbers and left behind, indicated the date of this pillaging. What were the robbers after? Some personal jewelry such as a ring, a pair of earrings, a bronze bracelet, cosmetic utensils and the like, in addition to a few pottery or glass vessels—these are all one would be likely to find in such a coffin.

Many of the sarcophagi are decorated with various

• In a postscript to his article, "The Necropolis of Beth She'arim," which appeared in *ARCHAEOLOGY* 8 (1955) 236-244, Dr. Avigad, director of the excavations 1953-1955, mentioned the discovery of a catacomb different from all the others which had been found up to that time. This unusual burial place is now fully described.

Photographs by Arie Volk

The catacomb suffered a heavy collapse of rock, apparently caused by an earthquake. The excavator is shown walking on heaps of fallen rock to reach chambers lying beyond.



A small chamber packed with sarcophagi. Even the doorway is blocked. The coffin at the rear is about nine feet long. The author is looking at a decorated sarcophagus. Gabled lids with undecorated *acroteria* at the corners are common to all the sarcophagi.

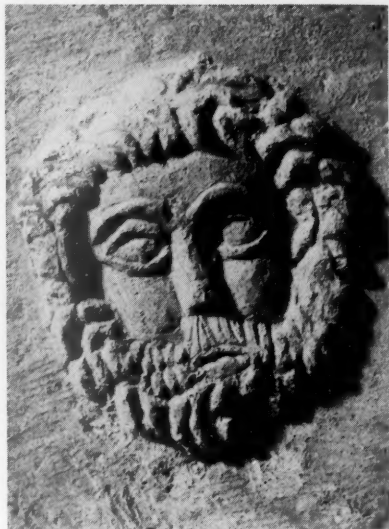
carved designs. Garlands suspended from columns, eagles, bulls' heads, *tabulae ansatae* and other motifs were borrowed from Roman art. Rosettes and other compass-drawn designs, heraldic lions, a seven-branched candlestick, the Torah shrine, etc., all of which occur on the coffins, were current in popular Jewish art of the Roman period. Most of these motifs were taken from the repertory of decorative art of the ancient synagogues. Here for the first time we find them on Jewish sarcophagi of this period.

The most remarkable decoration is carved in relief

on one of the narrow sides of a coffin—a bearded face resembling that of a pagan deity. Here it is merely an ornament, but it is startling to see such a carving on a Jewish coffin in a catacomb where, as the inscriptions indicate, families of rabbis lie buried. It is further evidence of the unorthodox attitude of the Jews of that period in matters of art, as proved by representations of human beings in synagogues, where one would certainly expect strict observance of the Mosaic law forbidding the "making of a graven image, the similitude of any figure and the likeness of male and female"



A typical sarcophagus with columns in relief, festoons and rosettes.



A bearded face on the side of the sarcophagus shown at left. It resembles the usual representation of a pagan deity such as Zeus.



Torso of a barbarian (?) soldier, a fragment from a sculptured marble sarcophagus.



A sarcophagus with compass-drawn designs of rosettes and interlaced circles. The incisions are painted red. Note the hole through which the robbers entered. A similar hole appears in each sarcophagus.



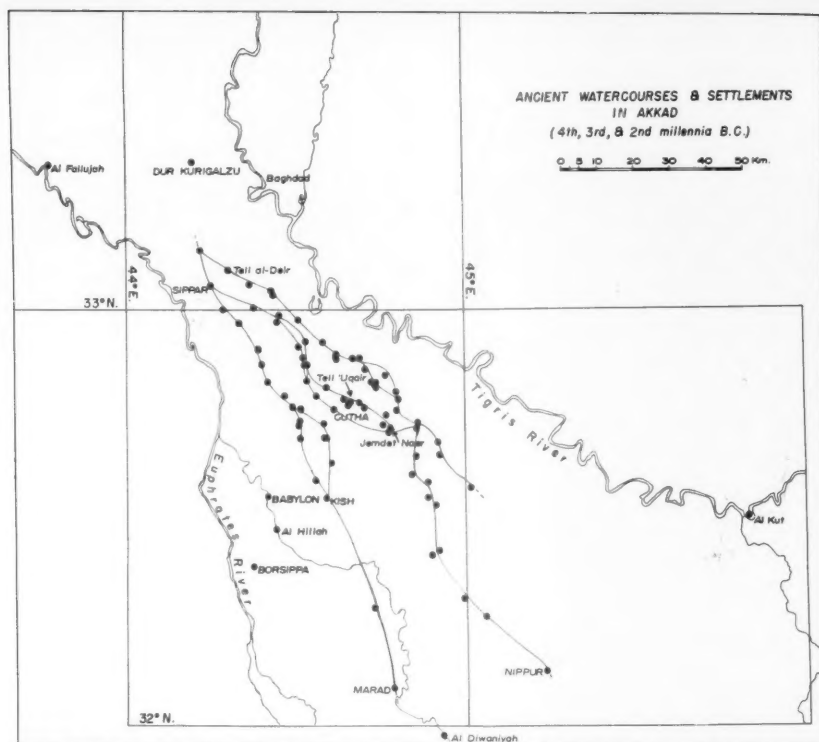
A sarcophagus distinguished by its original ornamental composition and the crudeness of its figure carvings. Here is shown only the left portion of the front, with interlaced circles in relief and a conched *aedicula* which apparently represents the Torah shrine. A long-legged bird stands at the opening.

SARCOPHAGI AT BETH SHE'ARIM *continued*

(Deuteronomy 4:16). It seems as though this law was not taken literally in those days of increased Hellenistic influence. The emphasis was apparently put on the warning not "to worship them and serve them."

The sarcophagi we have mentioned are made of local limestone. The debased style of ornamentation is typical of local craftsmanship and of Jewish popular art of the Roman period. But in this catacomb there were also decorated coffins of quite a different character—imported marble sarcophagi decorated with sculptured figures of men, women and animals in a developed Roman style. All of them had been broken to bits in the early Arab period, presumably to serve as raw material for the lime kilns. Heaps of marble splinters and fragments of sculptured figures which we found strewn about the cave are the only remnants of these lost art treasures. The small fragments preserved show that these sarcophagi were decorated with scenes from Greek mythology. One can be identified as a combat of Amazons and Greeks. This reminds us of the magnificent Amazon sarcophagus found at Tell Barak near Caesarea, which is thought to have been imported from Athens in the second or third century A.D. During this period sarcophagi

with mythological scenes were in vogue in various centers of the eastern Mediterranean. Their importation into Palestine seems to have been more extensive than was previously supposed. The most surprising thing is that they were used in a Jewish cemetery in spite of their pagan mythological decorations. Only one fragment of a sarcophagus of this kind had previously been found in a Jewish tomb, in an earlier excavation at Beth She'arim, and this showed the well known subject of Leda and the swan. Such a find in a Jewish tomb was regarded as so shocking that scholars were inclined to consider it an accidental intrusion. Now, of course, we are convinced that it was not an exception, and that Beth She'arim was apparently a good market for this kind of imported sarcophagus. The mythological scenes must have been meaningless to the Jews, who regarded them simply as of decorative value. Similar pagan motifs had already been found on sarcophagi in the Jewish catacombs of Rome. These, too, were difficult to understand. Now, with the further examples which have recently come to light in the necropolis of Beth She'arim, it becomes apparent that such representations were commonly used in Jewish tombs of the Roman period.



SETTLEMENTS IN ANCIENT AKKAD

BY ROBERT M. ADAMS

IN Mesopotamian archaeology there has been a gradually increasing tempo of discovery for more than a century. While the emphasis has been on excavation in the great urban centers of antiquity—and particularly their temples and public buildings—a few archaeologists have devoted brief periods to surface reconnaissance. In a two-week survey during a recent season's work at Nippur, for example, Dr. Thorkild Jacobsen and his associates blocked out several major watercourses of Sumerian and Babylonian times by mapping the great mounds, or *tells*, where pottery and other surface remains indicated early occupation adjoining the filled-in and forgotten channels. For ancient Sumer, which occupied roughly the southern half of the flat and fertile plain between the Tigris and Euphrates rivers, it has thus become possible to locate a substantial number of the larger towns. With this as a beginning, historians can better interpret the textual evidence of political and economic relations among them.

North of Sumer lay the region of Akkad, and here early settlement patterns have been

• Robert M. Adams, Assistant Professor of Anthropology at the University of Chicago and Director of the Oriental Institute's Iraq Surface Survey which is here described, was born in 1926, served in the U.S. Navy (1944-46), studied at the University of Chicago (Ph.D. 1956).

His interests are broad, ranging from the Near East to Middle America. He has worked at Jarmo in Iraq as well as at Mayapan, and is a participant in an anthropological program in the Mexican state of Chiapas that is concerned with the interrelations of land-use and settlement patterns with different environmental zones. At present he is once again in Iraq, where he is extending the study of ancient agricultural and settlement patterns into the Diyala area east of the Tigris.



Photographs by Vaughn Crawford

A cold morning in camp at Tell 'Uqair. A welcome pot of tea is on the camel-dung fire in the foreground, the Survey's tent on the left. In the background is the prehistoric mound where a temple and shrine were excavated in 1940-41. Squatting by the fire is a villager who acts as government antiquities guard for the region.

harder to reconstruct. Although it is almost one hundred miles from modern Baghdad south to Nippur across Akkad, only a thin scattering of sites of the fourth, third and second millennia B.C. had been reported until the Oriental Institute Iraq Surface Survey went into the field in September 1956. Of the centers reaching true "city" size only the mounds covering Sippar, Cutha, Babylon and Kish were known, while smaller settlements could be identified from reports of small-scale soundings. In contrast with Sumer, then, there was a suggestion that Akkadian city-states were widely separated and perhaps later in development, and that for a long time villages and small towns were the types of settlement characteristic of the area.

Aside from the concrete task of locating new sites and charting ancient watercourses, this was probably the most important problem which the Survey attempted to solve. Had early sites in Akkad eluded previous detection because they were small, because they had been largely covered over and destroyed by the shifting rivers and by later occupants—or because the region was only sparsely settled in the first place? The proper weighing of these alternatives could not be handled as an appendix to an excavation. It required the inspection of every site of every period within a wide area. It required large-scale maps on which *tells* could be located by triangulation. The problem included some novel departures in expedition logistics, such as the preparation of standardized bags of tea and sugar to be exchanged for food. Finally, it involved a fairly steady diet of rice, canal water, broken jeep springs and blistered feet for about one hundred days of active survey over a period of five and a half months.

Supplemented from time to time by guides and local

dignitaries, a staff of four formed the nucleus of the field party. The author acted as director, while Dr. Vaughn E. Crawford represented the Baghdad School of the American Schools of Oriental Research, which co-operated in the project. The Directorate General of Antiquities of Iraq was represented successively by Abdul Mun'im, Naguib Kiso and Ahmed Mahdi, and Yasin 'Abbas Ahmed was mechanic-driver. Robert A. Fernea, National Science Foundation Fellow attached to the Survey at first as an assistant, began a related project—an intensive study of the social organization of a modern irrigation system. We hope that his work will offer useful insights into irrigation systems in ancient society.

Our procedure was similar to that of Jacobsen. A succession of temporary bases was established, each occupied for a few days or a week. When possible, they were set up in or near a small town where quarters were made available, with wonderfully open-handed hospitality, by school teachers, civic officials and others, and where meals could be obtained at a local teahouse or restaurant. We were fortunate in being able to use as a main base in Baghdad the headquarters of the German Archaeological Institute. Its excellent facilities were highly welcome when we limped back from two weeks of field work for a few days devoted to the completion of maps and notes and the repair of vehicles.

Our field work was generally tedious and undramatic; no particular finds but only the entire season's cumulative results were important to us. Each day we would range out from our current base, methodically visiting every site shown on the maps and following every road and trail in the search for sites which had escaped notice. Since many of the early settlements in which we were most interested exist today only as low, salt-



Left: The author collecting potsherds from the characteristically pitted, salty surface of an unnamed Early Dynastic village mound north of Kish. The mound barely rises above the level of the surrounding fields.

Below: The collection of sherds is spread out on the hood of the jeep for culling and bagging. The occupation of the site goes back to Ubaid times, but most of the pieces seen here are Early Dynastic. At left is Naguib Kiso, at right the author; in the middle is the inevitable bystander who always materialized, even in the midst of apparently uninhabited desert.



ANCIENT AKKAD *continued*

encrusted swellings which are almost hidden even by thin surrounding stands of crops or camelthorn, it was necessary to establish a kind of informal grid so that the survey would come within at least a mile of every point within the area.

When working beyond the limits of present cultivation, we often covered ground rapidly. There is much sharp minor relief on the open desert that impedes jeep travel, and occasional dust storms make tracking and mapping difficult, but for the most part one can navigate from dune to mound and back to dune again in relatively straight lines. Cultivated areas offer greater difficulties, for cultivation in central and southern Iraq means muddy fields and irrigation ditches to be forded or jumped—the latter not always successfully, as soft, overgrown canal banks afford poor take-offs and landings. Averaging these two kinds of conditions, we were able each day to survey about twenty sites within an area of twenty square miles. Usually only one of these would prove to have been occupied between the Ubaid and Kassite periods, while the others would be too recent in date to be significant for the problems with which we were primarily concerned.

While a complete and accurate map of ancient sites was one objective of our operations, a second objective of equal importance was the approximate dating of at least the earlier sites by an examination of their surface features. As usual, broken pottery afforded the most important clues to dating. It could be supplemented to some degree by observation of worked stone fragments, characteristic brick sizes and shapes, and, for the later periods, by glass, bronze coins and terracotta figurines. Dr. Crawford's philological skills were unfortunately seldom needed. Inscribed bricks of King Nebuchadne-

zar of Babylon were extremely common, but no other traces of writing were encountered.

Apparently the underlying strata in most mounds are considerably churned up by the digging of wells, graves and house foundations and by brick-making in successive later phases, for we had little difficulty in tracing the whole history of a site from surface examination alone. It is possible, of course, that where there was a heavy later overburden, sparse traces of early occupancy were occasionally missed, but the consistency of our results—both internally and in relation to evidence from cuneiform records and previous soundings—argues strongly that the complete span of a site's occupation is usually represented on the surface. With respect to extent or intensity of settlement, on the other hand, only that of the uppermost levels can usually be deduced from the surface. Basal levels in long-occupied mounds are seldom represented in our collections by more than a handful of sherds.

Our method of surface collecting differed from that usually employed in New World surveys. We concentrated on the recognition of a limited repertory of shapes and designs whose chronology was already established, rather than on securing a random sample of the

surface pottery. The latter method, particularly as worked out by Ford and Willey in Peru (*American Museum of Natural History, Anthropological Papers* 43 [1949] part 1), is difficult to apply where long-inhabited sites are as common as they are in Iraq. Moreover, this method demands much larger collections from each site and correspondingly longer periods for studying them. Probably it is necessary where (as in Peru) there are sharp distinctions between stylized ceremonial wares seldom found on the surface and relatively plain domestic pottery. But in Mesopotamia the pottery from temples, palaces, graves and private houses alike falls within a single industrial tradition. Perhaps this reflects a greater professionalization of the craft as a result of the use of the potter's wheel, but in any case this unity of tradition makes small collections of *selected* sherds as useful for dating as much larger random samples (cf. Leslie Alcock, "A Technique for Surface Collecting," *Antiquity* 25 [1951] 75-76).

Further study will be necessary before the findings of the Survey can be reported in detail, but even small-scale preliminary mapping suggests several tentative obser-

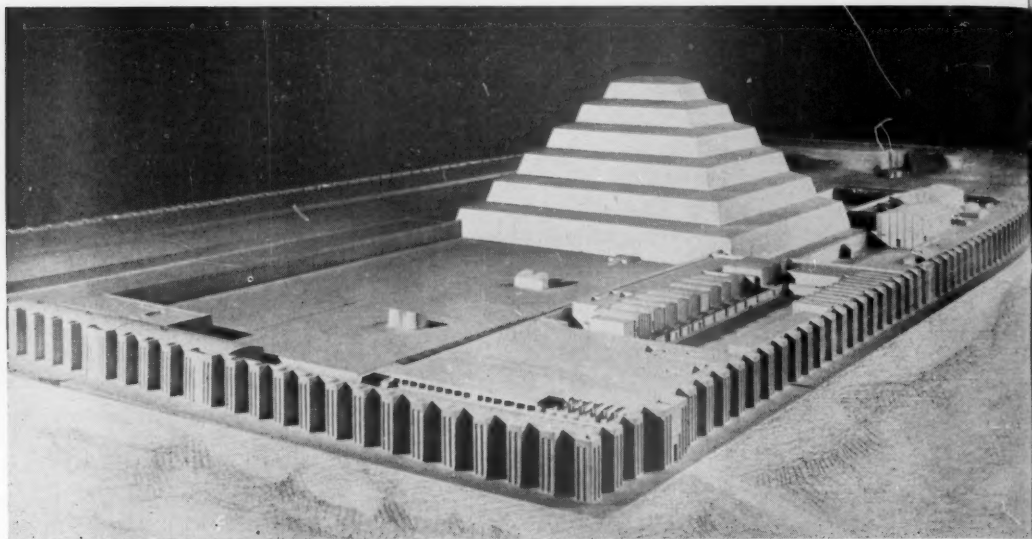
ventions. In the first place, two major axes of settlement can now be identified in ancient Akkad along watercourses that lie far from the present positions of the rivers and that have been completely submerged by the rising alluvial plain. Taking off from the Euphrates near Sippar, one watercourse flowed southward through Kish, while the other passed north of Cutha and continued thence southeast into Nippur. Secondly, it is apparent that these were not straight-coursed, smoothly flowing canals but for the most part were braided stream channels—bifurcating, rejoining, shifting periodically with accumulations of silt and the effects of floods. There are indications, particularly on the Nippur branch, of important shifts in settlement which must have accompanied these fluctuations in course. Occupation of the area seems to have depended for a long time upon local accommodation and channel clearance, purely artificial canals being constructed only for distributing water directly into the fields. More intensive exploitation of the land began only in the second millennium B.C., with the construction of the first lengthy and large-scale system of artificial irrigation waterways. For the sake of clarity, these Old Babylonian or Kassite canals and the accompanying settlements have been omitted from the map shown here. Finally, the contrast of Sumerian "cities" with Akkadian "villages" seems to be confirmed by the very small size of most of the sites we located. Even within the limited area covered by the Survey, sites tend to be larger as one moves south. On the other hand, the over-all density of population may not have been heavier, since the southern sites also tend to be more widely separated.

From this brief summary it is clear that the survey of Akkad is still far from finished. The ancient course of the Tigris, for example, has not been located at any point. Further work is also needed to establish the former system of canals and watercourses both north and south of the city of Babylon. Fortunately we anticipate a return to these and similar problems in the near future. Beyond its historical and anthropological interest, the task of reconstructing settlement and irrigation patterns of the past is made the more urgent by the present efforts of the Iraq government to expand and improve its irrigated lands, using the whole weight of modern technology. If these technological improvements render past and present systems not strictly comparable, the emphasis on irrigation in Iraq's development plans at least serves to remind us that urban settlements and intensive agriculture were respectively the measure and starting-point of early Mesopotamian civilization and prosperity.



The same collection of sherds is being stamped by Dr. Crawford with the site's code number. The author, seated on the cot, checks published reports for similar features in a securely dated context. Headquarters here was one room of a house shared by several teachers in the town of Hassawa.

1. Scale model of the funerary complex of King Zoser (ca. 2800 B.C.) at Sakkara, looking northwest.



REBUILDING IMHOTEP'S MASTERPIECE

By JEAN-PHILIPPE LAUER

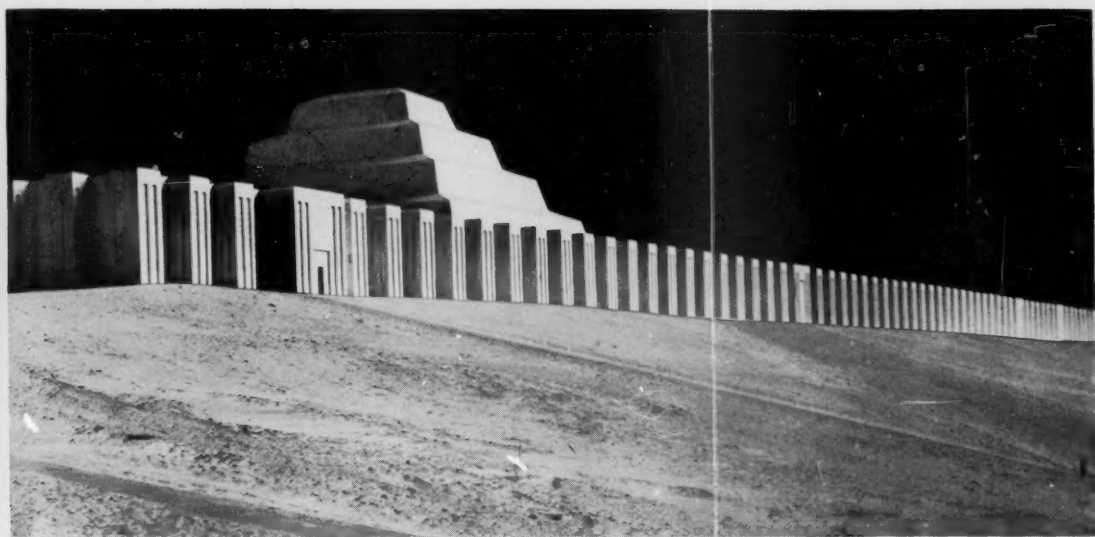
ABOUT NINE MILES SOUTH of the famous archaeological site of Giza, the Step Pyramid of Sakkara, oldest of the pyramids, rises on the plateau of the Libyan desert, facing the site of Memphis, the ancient capital of Egypt. The Step Pyramid was the tomb of King Zoser, a pharaoh of the beginning of Dynasty III (about 2800 B.C.). With its unique stepped outline it constitutes the center of a vast monumental complex built of fine limestone blocks which were carefully smoothed and matched in regular courses. The complex, covering more than thirty-five acres, was entirely surrounded by a magnificent bastioned enclosure wall adorned with recesses (Figures 1, 2).

In June 1955 the reconstruction of the entrance façade of this enclosure wall was finally accomplished (Figure 3), using the ancient stones which were dug up in the sand and properly identified. This rebuilding, under way since 1946, was frequently interrupted by lack of

funds and has now entirely ceased because of recent events. What was still to be done was the completion of the back of the enclosure wall by the reconstruction of the rampart walk, which consists of replacing the paving blocks and fitting them to the coping of the wall which forms a parapet.

If one bears in mind that up to the time of King Zoser architecture had been mainly in mud brick, and stone was used only incidentally, this monument becomes even more impressive. Such construction in dressed stone in this archaic period would be hard to explain without assuming the presence of a man of genius. Such a genius was the illustrious Imhotep, prime minister, physician and architect to King Zoser. He had the rare distinction of being deified by posterity. Manetho the historian, who

3. *Right:* The monumental entrance façade, the only access to the Step Pyramid precinct, now rebuilt.



2. A reconstructed view of the Step Pyramid with its white limestone precinct, as it was seen from Memphis. The only entrance is on the left; the other gates are simulated.





4. Engaged fluted columns of the "T" Temple, as now reconstructed.



5. The west end of the entrance colonnade, looking southeast. The engaged columns represent bundles of reeds.



6. Engaged columns on the east side of the Northern Building, made to resemble the papyrus plant.

REBUILDING IMHOTEP'S MASTERPIECE *continued*

lived in the third century B.C., attributed to Imhotep the invention of construction in dressed stone. Excavation near the entrance colonnade of the enclosure wall brought to light the base and feet of a royal statue on which Imhotep's name is preserved. There, side by side with the Horus name of Zoser, Neteri-khet, can be found the name of his minister, with the following titles: "Chancellor of the King of Lower Egypt, First after the King of Upper Egypt, Administrator of the Great Palace, Hereditary Nobleman, High Priest of Heliopolis, Imhotep, the Builder, the Sculptor. . . ." This dedication by the statesman-architect to his king shows us this divine figure emerging from legend and entering into the domain of history. The prodigious work of Imhotep, toward the restoration of which our efforts were directed, exercised an enormous influence on the art of building in Egypt, and thereby also on that of other countries of the ancient world. At a time when the Nile Valley still had only mud brick buildings one can imagine how profound an impression must have been made by such a monumental complex in dressed stone. This monument was visible throughout the entire Memphite region—and as a result must have reflected

enormous prestige on King Zoser and on his architect. This prestige, as well as his medical talents, explains the continuing worship of Imhotep, which in later times the Greeks assimilated to that of Asklepios, their god of medicine.

On the photographs of the model (Figures 1, 2) which show the reconstruction of this immense funerary complex one can see some of the false doors, of which fourteen are built into the walls of the enclosure. There was actually only one door (about three feet wide) by which one could enter the enclosure. Each of the portals of Zoser's "house of eternity" had two door leaves; they are simulated in stone, and some are represented as closed while others are shown open or partly open. The assumption was that these doors would be opened or closed at the magic bidding of the royal *ka* (a vital force, which was thought to accompany the body in this world and the next). But the doors were not the only wooden elements which are represented in stone. One finds also sham barriers sculptured in high relief on the partition walls of various sanctuaries, as well as ceiling blocks rounded on the under side in imitation of logs.

As for the buildings themselves, they show curious at-

REBUILDING IMHOTEP'S MASTERPIECE *continued*

tempts to transpose into stone architectural forms and elements originally devised for mud brick, wood or even reeds—a development comparable to that occurring in early Greek architecture, especially temples of the Doric order. This is the reason for the elongated proportions of the columns, which represent fluted wooden posts or bundles of palm branches, and for the elegant curve of some roofs which reproduce light reed structures originally erected to shelter the royal throne or, on festive days, the statues or emblems of the various deities. All these buildings were thus translated into stone in order to secure for the *ka* of King Zoser the setting necessary for the exercise of his royal functions in the hereafter and for the renewal of his power in eternity. The buildings which composed this vast symbolic scene were not real structures but only façades whose interior was filled mostly with rubble. The evocation of their outline and their façades had to suffice the *ka* and its retinue in the other world. Except for the funeral itself and the offering service, no actual ceremonies were performed in this complex where almost everything belonged to a purely ideal world.

Figures 4-8 show views of the principal reconstruction we have accomplished, following the principles of *anastylosis* as defined at the International Conference on

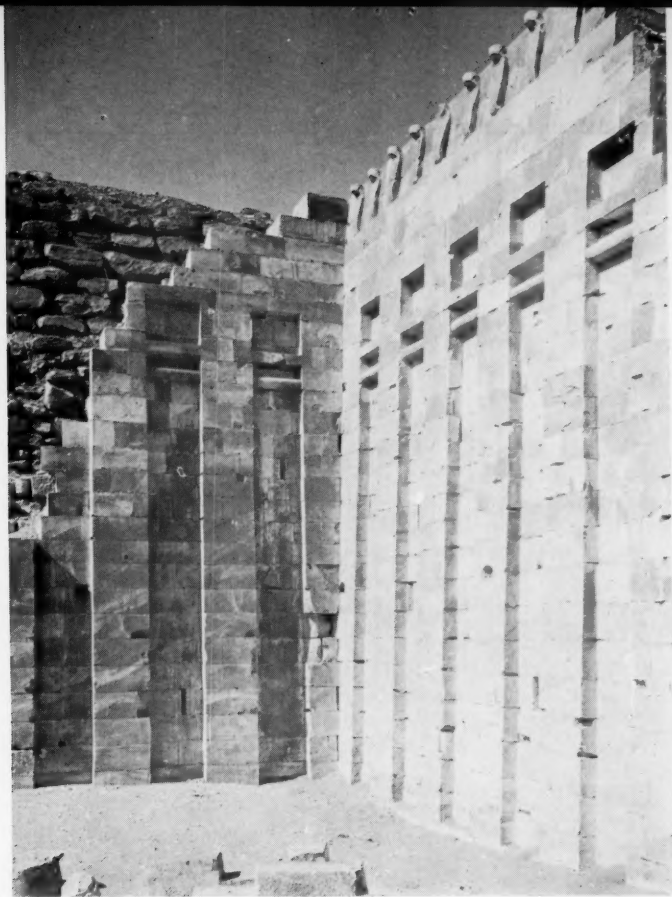
Restorations and Excavations, which was held in Athens in 1931. According to this definition, which resulted from the outstanding work done by the architect Nicholas Balanos on the Parthenon and other monuments of the Acropolis, *anastylosis* means "the rebuilding of columns with original elements whose provenience has been duly established." Figures 4-7 show the various types of columns which have thus far been reconstructed. These columns, now restored to their original appearance, are without doubt the most ancient still standing.

By applying the same principles we have likewise rebuilt sections of walls particularly characteristic of the remarkable architecture of Imhotep. Examples are the "Cobra Wall" (Figure 8) and the entrance to the bastioned enclosure (Figure 3) mentioned at the beginning of this article. In the latter case we were able to determine in advance even the height of the wall, thanks to the batter, which amounts here to three centimeters per meter. The height was calculated to be about ten and one-half meters, which corresponds to twenty royal Egyptian cubits.

In other instances, as for example the façades of the "Northern Building" and the "Southern Building," which are decorated with engaged fluted columns (of which numerous drums are preserved), the loss of the



7. The façade of the Southern Building with the entrance to the chapel which occupies a small portion of the structure. The rest of the building consists of a solid core of stone rubble.



8. The "Cobra Wall"—the facing of the superstructure of King Zoser's South Tomb, perhaps the tomb for the canopic jars containing his viscera.

facing has prevented complete reconstruction. We replaced only those drums which were almost entirely preserved, and using the few existing facing blocks, rebuilt the upper courses of the wall to the height reached by the ancient columns (Figure 7).

In the *Heb-sed* (festival) court we found, on a much reduced scale, the remains of constructions belonging to the same type of prehistoric edifice, with fluted columns and arched roof derived from a prototype in reedwork, and later carried out in wood before being constructed in stone. Here we had decided to undertake a more complete reconstruction of one of these shrines, using the principal elements, which we had identified and classified on the ground. We were preparing new blocks to replace missing elements, but recent events stopped us from continuing our work.

The foregoing summarizes the activities in which the Egyptian Antiquities Service has been engaged around the Step Pyramid during the past twenty-five years. Gradually the most typical elements of this strange, so-

phisticated architecture have been revived before our eyes. They bring to light the forms and proportions created at the dawn of history by the divine Imhotep, and permit us to understand more and more precisely the prodigious monumental complex carried out by this brilliant architect. Standing at the close of the art of the Thinite period (First and Second Dynasties), of which it forms the culminating point, this funerary ensemble, with its central structure of gigantic steps, constitutes at the same time the point of departure of a new art, that of the Old Kingdom.

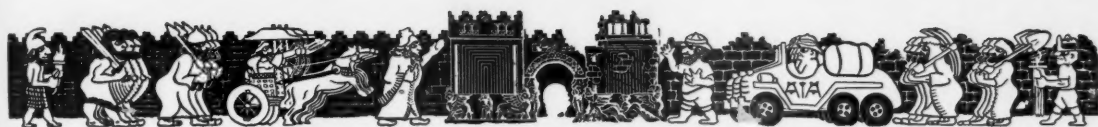
• The author, who was Architect of the Antiquities Department of Egypt and member of the Institut d'Égypte, first came to Egypt in December 1926 to work at the excavation and reconstruction of the Zoser Precinct. Except for the war years he was continuously engaged in the conservation and reconstruction of the buildings of the Third Dynasty, the culmination of which is the final restoration of the entrance façade of the Step Pyramid complex. Lauer has to his credit many important publications on the architecture of the Archaic period and the Old Kingdom, especially the pyramids.



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Obituaries

in keeping with their mobility and enterprising spirit to have pushed still farther west (and conceivably somewhat northward too, into Europe). There is no telling where we will find their Akkadian records, be they in cuneiform or in strange native scripts."

Those who are interested in the background for Dr. Gordon's discovery may read "King Nestor's Four-Handled Cups—Greek Inventories in the Minoan Script," by Michael Ventris (*ARCHAEOLOGY* 7 [1954] 15-21), *Documents in Mycenaean Greek*, by Michael Ventris and John Chadwick (Cambridge University Press, New York 1956), and George E. Mylonas' review of this book, which also reviews the history of the decipherment, "Mycenaean Greek and Minoan-Mycenaean Relations" (*ARCHAEOLOGY* 9 [1956] 273-280).

Gibeon—1957 Season

A year ago we reported the results of a joint expedition (University of Pennsylvania—Church Divinity School of the Pacific) to the site of Gibeon, the famous biblical city near Jerusalem. This summer excavations were resumed once more.

The huge pool located last year was completely dug out. It was discovered that in their attempt to reach the ancient water-table inside the walled city, the Gibeonite engineers first cut a cylindrical pit 37 feet in diameter, to a depth of 33 feet. They then carved a spiral stairway against the face of the cylindrical hole. Below the 33-foot depth the steps—which numbered 79 from the surface to the pool—were cut into a tunnel which continued to circle downward, following the line of the pit. At a depth of 82 feet they struck water, and carved out a large room there for water-drawing purposes. When all debris had been carefully removed, water filled the Pool of Gibeon again.

Objects found in the filling of this remarkable pool yielded a wealth of evidence about the economic and social life of Gibeon in the seventh century B.C. Among the finds were fifty-four jar handles on which were archaic Hebrew inscriptions, some impressed while the clay was still soft, others engraved after the jar was baked. Preliminary study of the inscriptions reveals that they were labels on wine



One of the inscribed wine jar handles found at Gibeon, with its stopper.

jars made especially for the export trade. In this ancient "Bordeaux of Palestine" there were three major firms producing wine, each called by a familiar Bible name: Hananiah, Azariah and Amariah. The wine industry of Gibeon was further documented by the finding of over forty clay stoppers for the jars, and a large funnel for filling them.

On the handles of other jars were seal impressions bearing common Hebrew names. Some sixty-eight were inscribed "For the King" as well as with the name of one or another of four Palestinian cities: Hebron, Ziph, Socoh or Memshath. Each of these seals also contained a picture of a winged creature.

Staff members of the 1957 party included: Dr. James B. Pritchard, director; Prof. Fred V. Winnett, University of Toronto, assistant director; Asia G. Halaby, Jerusalem, cataloguer; Linda A. Witherill, Syracuse, N. Y., draftsman; Dr. Claus Hunno-Hunzinger, University of Goettingen, epigraphist; and Subhi Muhtadi, Jerusalem, surveyor.

Underwater Research in Guatemala

Ancient sites around Lake Amatitlan—a well known resort area seventeen miles south of Guatemala City—show that there has been continuous habitation at the lake from as early as 1000 B.C. Although the National Archaeological Museum has several specimens from the lake area, it was not known until recently what a great amount of ancient material was hidden at the bottom of the lake. Since 1955 a group of young Guatemalan aqualing enthusiasts has been exploring the waters of the lake with the object of locating good fishing grounds. In April 1955 one of them discovered the first

archaeological specimen at the southwest corner of the lake. Since that time a systematic search has been carried out and more than five hundred specimens have been brought up from depths ranging from 10 to 45 feet (the greatest depth of the lake is 131 feet). The finds include incense burners of various sorts and some stone sculptures.

During the summer of 1957 students from San Carlos University Summer School, directed by Dr. Stephan Borhegyi of the University of Oklahoma, joined the group and made a map of the lake, indicating the spots where archaeological material is relatively abundant. Part of the material excavated from the lake during the summer of 1957 has been deposited with the National Museum in Guatemala; the remainder is in five major private collections. Many of the specimens are of a hitherto unsuspected type and will need to be studied carefully. Representations of cacao trees and beans, *quetzal* birds and bats, previously unknown in the Highland Maya area, were frequent on the incense burner covers. These covers are presumably of early and late Classic date (A.D. 300-900). Several unusual types of three-pronged incense burners, 1.50 meters high, were also found, complete with hollow prongs, fishtail protuberances, vertical side flanges and a new feature tentatively labeled "loop-body handles." The material also includes several two-chambered incense burners with chimney covers, bow-tie adornments, and decorations strongly resembling Teotihuacan style. Some of the small offering vases were found on the lake floor in piles of six or seven, neatly fitted one into the other. This, as well as other evidence, seems to indicate that some of the objects in the lake were deposited as offerings at a time when the water level was much lower than it is now.

On the south shore there are several spots where geysers appear and disappear periodically. There are many outlets for hot water springs on the shore and in the lake, where sulphurous water bubbles up so hot that eggs can be boiled by simply dipping them in the water. As might be expected, there are several hotels on the lake shore which offer "medicinal" thermal baths. Understandably, these natural phenomena inspired awe in the minds of the ancient inhabitants and, com-

bined with the fear of the volcanic activities of nearby Pacaya, it is easy to imagine that the area was thought to be the abode of particularly powerful spirits or gods. Even today the town of Amatitlan is visited by pilgrims. The figure of the *Niño de Atocha* in the seventeenth century church has won a reputation for its healing powers, having replaced its pre-Columbian counterpart, a stone figure which once stood on the lake shore. On May 3rd, the day of the Festival of the Cross, the figure of the *Niño de Atocha* is taken in a magnificent procession across the lake, while from the accompanying boats flowers and fruits are thrown into the lake. This seems clearly a survival of pre-Columbian ceremonies and suggests that there may still be much more material awaiting recovery.

Orientalists at Munich

We are greatly indebted to Dr. Edith Porada, who undertook the almost superhuman task of reporting the highlights of the 24th International Congress of Orientalists at Munich, August 28-September 4. She was ably assisted by L. Carrington Goodrich (Far East), Machteld J. Mellink (Near East and related areas) and Hans Wolfgang Müller (Egyptology). Owing to restrictions of space, we can present only a selection of the papers, mostly dealing with current excavations.

"I didn't know there were so many of you," was the surprised comment of Reinhard Herbig, Director of the German Archaeological Institute in Rome, who happened to be in Munich at the time of the Congress. 1357 persons had indicated that they would

attend (though not all of them actually appeared) and 447 announced papers in the following fourteen sections: Egyptology; Cuneiform studies and ancient Near Eastern archaeology; Old Testament, Biblical archaeology and Jewish studies; Christian Orient and Byzantine studies; Semitics; Islamic studies, divided into two parts: language and literature, and religion, history and art; Turkology; Iran, the Caucasus and neighboring areas; Indology; Central Asia and the Altai regions; the Far East (China, Japan, Korea); Southeast Asia; Africanistics.

In the ancient Near Eastern section, Heinrich Lenzen, who directs the excavations at Uruk-Warka (Iraq), outlined the history of a temple and of an enigmatic structure next to it. The temple walls were made in an unparalleled manner, by using a concrete of ground-up burnt bricks and gypsum, poured between boards over layers of cones, the tips of which formed lozenge patterns on the outside of the walls. The temple could have functioned only briefly, during the late fourth millennium B.C. Then a new building was constructed, partly destroying the temple foundations. This building is unique in that it had no entrance. Its central room, the smallest, was surrounded by corridors, from one of which it could be entered. In these corridors offerings had been heaped up, and over them were spread reed mats and asphalt. Finally, the remaining space was filled in. The central room, where a fire had been made, contained only a few objects. This room was also filled in. The walls of an adjoining room were then white-washed, perhaps in a purification ceremony. The participants must have left the building by ladders, and after this

it was not entered again. Lenzen also reported the discovery at Uruk of a tumulus of the Sasanian period, with a tomb containing four urns and a gold wreath more Roman than Oriental in appearance. Who could have had such a magnificent tomb constructed in the third or fourth century A.D., when Warka had lost its importance as a religious center, remains unknown.

H. G. Güterbock of the Oriental Institute of Chicago and Thomas Beran of the German Archaeological Institute at Istanbul reported for Kurt Bittel on recent excavations at Boghazköy (Turkey), once the capital of the Hittite Empire. In the lower city was found a settlement of the time of the Old Assyrian merchant colonies, like those at Kültepe and Alishar. Most of the Boghazköy finds belong to the latter part of this period (= Level IB at Kültepe and Level II at Alishar). Earlier remains consist of walls of boulders, sherds of hand-painted ware and Alishar III pottery. The two levels subsequent to the Colony period, belonging to the time of the Hittite Empire, contained some pottery which must have been imported from Syria or Cyprus.

Nimet Özgüç, wife and collaborator of Tahsin Özgüç, director of excavations at Kültepe, showed that the Old Babylonian cylinder seals of Level I B at Kültepe correspond to those used in the time of Kings Hammurabi and Samsu-iluna, his son. She was able to establish far more subtle chronological criteria for the cylinders of Anatolian and Syrian style than had previously been possible. Sedat Alp of the University of Ankara reported on his excavations at Karahüyük near Konya, one of the largest mounds in Asia Minor. He found several building lev-

INDEX TO ARCHAEOLOGY VOLUMES 1-10

A GENERAL INDEX to the first ten volumes of ARCHAEOLOGY is now in preparation and is expected to be ready for distribution before the end of 1958.

THE FORMAT of the index will be the same as that of ARCHAEOLOGY. The price is not yet determined. A final announcement will appear in one of the 1958 issues.

els antedating the Hittite Empire. Among the most interesting finds were seals and seal impressions. Relations with Anatolian and Syrian glyptic styles are well documented. Outside of the present mound a section of a major fortification wall was excavated.

B. B. Piotrovsky of the Academy of Sciences of the Armenian SSR summarized recent excavations at Karmir Blur (Transcaucasia), which formed part of the kingdom of Urartu in the eighth and seventh centuries B.C. (The Urartians were the neighbors and competitors of the Assyrians and shared much of their material culture and art styles.) A great fortress was discovered, built by King Rusa II in the second quarter of the seventh century B.C. Stored in it were large amounts of grain, fruits and wine, the latter in *karas*, large earthenware vessels similar to Greek pithoi, which were half buried in the ground. Their capacity varied from eighty to one hundred liters as indicated by cuneiform signs or Urartian hieroglyphs. In one *karas* ninety-seven bronze bowls were found piled up. Only the topmost and the lowest were corroded; the rest were in mint condition. In the center of each is inscribed the name of one of the kings from Menua to Rusa I. Other storerooms contained pitchers of red polished ware; in one 1036 pitchers were found. There were also bronze ingots, wooden objects, textiles and yarn and even a sesame mill. Other finds in the fortress include inscribed shields, ten bronze quivers bearing the names of Kings Argishti I and Sarduri II and filled with arrow heads, two decorated bronze helmets of Assyrian type and a coat of plate armor with a dedicatory inscription of King Argishti I. There were also parts of bronze horse trappings—bridles, cheek pieces, buckles and bells with names of various kings.

The excavation also yielded imported objects—Assyrian cylinder seals, bronze bowls, glass beads, an Egyptian amulet and scarab, Scythian horse trappings, beads, and objects made of horn. These finds show the extensive relations of this Urartian center with other parts of the Near East. Excavations were also carried out in the town, which was walled. This large area must have been carefully planned, with long, straight streets lined with residential blocks. Each block contained several similar units, consisting

of an open or half-covered court and two rooms, and isolated storerooms. Both the town and the fortress of Karmir Blur were destroyed ca. 600 B.C.

An earlier fortress erected by King Argishti about 775 B.C. was excavated on the hill called Arinberd. In a temple-like structure were found remains of wall paintings including ornamental motifs, palmettes, animal figures and sacred trees with genii. There was also the image of a god—probably Haldi—on a lion. This fortress seems to have been abandoned in the last decade of the eighth century B.C., and its treasures transferred to other fortresses, among them Karmir Blur.

Machteld J. Mellink of Bryn Mawr College commented on the pre-Cimmerian finds at Gordion (Turkey), in which Phrygian art appears in its best and least adulterated form. It is based on West Anatolian traditions, on which new elements were superimposed by the immigrant Phrygians. Relations to the East are now becoming increasingly obvious: the well built fortifications and storage units recall Urartian fortresses as much as they do Troy VI; pebble mosaics in modified Anatolian *megara* find more definitely organized parallels in North Syria; experiments in stone sculpture indicate Neo-Hittite prototypes. Typical Phrygian forms of art and industry were wood carving and metallurgy, for both of which Gordion was a major producing center in the eighth century B.C. In addition to many local bronzes, several Urartian pieces were discovered in the royal tomb opened in 1957. Two stitulae from this grave come from Assyria or its confines. These new finds prove direct contact between the major metal-producing centers of western Asia and eastern Asia Minor. Relations with Greece, on the other hand, are less obvious than expected.

Dr. Ali Sami, Director of the Archaeological Institute at Persepolis (Iran), reported on his excavations at Persepolis and Pasargadae. Many new buildings have been cleared on the terrace and in the plain of Persepolis. At Pasargadae three buildings of the "palace" type are now exposed. The beautiful workmanship of the polished stone floors is as remarkable as the sophisticated contrast of light and dark stone in walls and column bases. Kurt Erdmann of the University of Istanbul presented his interpretation of

the buildings on the terrace of Persepolis. He pointed out that Persepolis, which is never mentioned in diplomatic correspondence or other texts referring to political activities, and the buildings of which are suited only for large official receptions, may never have been the actual seat of the Persian kings. Instead, it may have been exclusively a place of religious and ritual significance where the new king performed his first New Year's ceremony, and every year thereafter commemorated it or renewed its power by re-enacting it.

D. S. Rice of the University of London reported on excavation of the great mosque at Harran (Syria), which was built in the Umayyad period (eighth century) but received its final form in the Ayyubid period (twelfth century). The Umayyad builders used late antique capitals and blocks with moldings from Roman structures. At the same time vegetal motifs of Classical origin were employed with little modification by Islamic workmen, and continued until Ayyubid times alongside typically Islamic patterns. Three stelae of the last Babylonian king, Nabonidus (father of Belshazzar), were used as paving stones in three of the mosque entrances. The cuneiform texts of these stelae, on which J. C. Gadd reported, reveal important data concerning Nabonidus' years of voluntary exile in Arabia.

Jean Vercoutter of the Sudan Antiquities Service reported on exploration in the Sudan, 1955-56. The Egyptian government's plan to build a high dam at Aswan prompted the Sudan Antiquities Service to undertake a systematic aerial survey of the rich archaeological area which would be submerged. Through the study of more than 2900 photographs taken in the course of the survey, new sites have been revealed and a better understanding has been reached of those already known.

Adolf Klasens of the Leiden Museum presented the results of excavating a cemetery of the First Dynasty near the site of Montet's excavations at Abu Roach (Egypt). Methods of burial varied from the most primitive type to elaborate graves which are a continuation of Upper Egyptian forms. Jean-Philippe Lauer of the Institut d'Égypte, Paris, offered new suggestions for reconstruction of the royal

tombs of the First Dynasty at Sakkara. Selim Hassan of Cairo University reported on excavations of the causeway of Unas, and showed slides of reliefs with extraordinarily lively battle scenes in which Egyptians are seen in hand-to-hand fighting with Asiatics. In his paper on the Sun sanctuary of Userkaf, Herbert Ricke of the Swiss Institute showed the most recent plans of this interesting structure. He also commented on the magnificent head found in the excavations, which he now tends to regard as that of a goddess, possibly Neith. A. Mekhitarian of the University of Brussels suggested that the same painter had decorated the tombs of Horemheb and Nebamon in the Theban necropolis. These two tombs, both dated in the reign of Thothmes IV, are strikingly similar and differ from others of the period. H. W. Müller reported on the progress since 1954 of the *Corpus of Late Egyptian Sculpture*. He also discussed the significance of the statues found in the sanctuary of Isis at Benevento (South Italy), which was erected in A.D. 88. Some of these were ordered in Egypt specifically for the sanctuary and therefore give a fixed date.

Jao Tsung-i of the University of Hong Kong spoke on *Ch'u tz'u* and archaeology. This early work of literature (fifth-third centuries B.C.) derives from the great state centered south of the Yangtze River near Tung-t'ing Lake. Some believe it could not have been written by the Ch'u people because they were uncivilized; others regard it as an imaginative creation of later times. Professor Jao showed from remains unearthed near Ch'angsha that these points of view are unjustified. Inscriptions, carvings, implements, etc. confirm its historicity.

Li Chi of the Academia Sinica at Taipei reported on the pottery and bronze vessels of the Yin-Shang period (traditionally dated 1384-1111 B.C.), from the site of Anyang. Five pottery groups can be distinguished. Some wares are traceable to Neolithic times, while others are of new design. Bronze vessels are of two types. The round-bodied seem to have a pottery origin, those with angular bodies have wooden prototypes. Dr. Li indicated that wood-carving was then highly developed.

Jitsuzō Tamura of Kyoto University discussed the civilization of the Liao Empire (Khitay), A.D. 916-1125,

illustrating with finds from the tombs of emperors (A.D. 983 to 1101) located near Pai-t'a-tzu in eastern Mongolia. Their interiors were covered with paintings. There were portraits of people dressed in Khitay or in Chinese fashion, landscapes, flowers, birds, animals, angels and architectural details. Sculptures include Bodhisattvas, musicians, angels and animals.

L. C. Goodrich of Columbia University spoke on recent discoveries at Ch'uan-chou (Zaytan), where the city walls were torn down in the face of the Japanese invasion (1938) and many inscribed objects revealed. Reviewing Chuang Wei-chi's publication of explorations there, he said that among the finds were an early seventh century tomb, remains of the eleventh-thirteenth century (coins, pottery, porcelain, stone figures and cowries), foreign tombstones from the Mongol period (1280-1368), an inscription which records the names of officials charged with control of ships, and Brahmin and Moslem remains of the 1300s. One Chinese and Mongol inscription of 1313 is especially interesting as it deals with administration of Manichaeans and Christians in this area.

Several exhibitions were held at the time of the Congress. The Ethnographic Museum showed its fine Far Eastern and Indian material, the paintings at the Pinakothek seemed to glow more magnificently than ever, and an exhibition of ancient minor arts at the Prince Carl Palais was most rewarding.

Neither the résumé of these few papers nor this partial list of exhibitions can convey the stimulating atmosphere of this Congress. Excursions arranged for the members and private hospitality on the part of German colleagues added a friendly touch.

ACLS Conference

The annual conference of the American Council of Learned Societies, to take place at Indiana University, January 23 and 24, 1958, will be devoted to "The Present-day Vitality of the Classical Tradition." The program committee (Prof. Paul L. MacKendrick, chairman) has decided to concentrate upon the sense of tragedy developed by the Greeks as the aspect of the Classical tradition which best exhibits its enduring vitality. Hence the meetings will take the form of demonstra-

tion, with appropriate commentary and interpretation.

The conference will include talks by Prof. Eric Havelock of Harvard, Prof. H. D. F. Kitto of the University of Bristol, Prof. Otto Brendel of Columbia University, and others. At one session a reading of Sophocles' *Antigone* will be followed by a performance of Anouilh's version of the play.

The program has been designed to be as concrete as possible, to proceed by illustration, and to afford a maximum amount of contact with the documents themselves, accompanied by a minimum of verbalizing. It is hoped that the whole approach will stimulate new thinking concerning the nature of the Classical tradition.

Unique Find in Palestine

The ancient coin pictured on this page may seem more like a shapeless lump of metal than a work of art, but actually it is a most important and interesting document.

Found at Shechem, the famous biblical site forty-one miles north of Jerusalem, where the joint expedition of Drew University and McCormick Theological Seminary began excavating in 1956, this object is the earliest coin ever found in Palestine. Dr. G. Ernest Wright, director of the expedition, had



Greek coin found at Shechem. Above: obverse, below: reverse. Diameter 2 cms.

this to say about it in the February 1957 *Biblical Archaeologist*:

"... Our one unique piece is a rare silver and white gold coin, either from an obscure tribe in northern Greece (Macedonia) or from the island of Thasos nearby. It was made during the second half of the sixth or the early years of the fifth century. It is the oldest coin known to have been found in Palestine thus far, but what it is doing such a distance from its home is anyone's guess. It is not one of the familiar Greek types which the Persian government imitated during the fifth century when coinage was first introduced."

Fellowships for Byzantine Studies

The Dumbarton Oaks Research Library and Collection wishes to announce that fellowships are again offered to graduate students interested in subjects related to the Late Classical, Early Christian or Byzantine periods. Research fellowships at the post-doctoral level are also available.

Applications for the academic year 1958-59 should be submitted before March 1, 1958. For information apply to the Director of Studies, Dumbarton Oaks Research Library and Collection, 1703 Thirty-second Street, N.W., Washington 7, D. C.

A Greek Bronze Mirror

In his public buildings, as everyone knows, the Greek combined beauty with utility: sculpture adorned the gables of his temples, and paintings the walls of his porticoes. But his home, too, though it might by modern standards seem sparsely furnished, contained objects which were not only useful but pleasing to look at. Socrates claimed that the lowliest household vessel could be beautiful if it were well designed to perform its function.

And so the Greek lady's mirror—while its metal reflecting surface was not so efficient as the modern looking-glass—was handsomely adapted to be a useful item of feminine equipment. The bronze mirror illustrated on this page, recently acquired by the Royal Ontario Museum, represents a type popular in the fifth century B.C. Made, perhaps, in Corinth, a city famous for fine craftsmanship in bronze, it has a handy hook concealed by a small siren



Bronze mirror: detail showing handle and base. About 470 B.C. Total height of mirror and stand 11 inches.

figure atop the mirror disc for hanging it on the wall, where it could serve both as wall decoration and as a place for milady to "take one last look."

For more serious contemplation she could rest it on its three-footed base upon her dressing table. Here the four-inch bronze microcosm of her charming self in Doric chiton elevated the disc to a convenient height, or afforded a comfortable grip when she wished to hold the mirror close in applying a touch of rouge or giving that final deft pat that made certain every lock of hair was in proper battle array!

J. WALTER GRAHAM

Correction

In the Autumn issue, page 223, the name of our reporter for the 1957 meeting of the American Oriental Society was inadvertently omitted. We offer our apologies to Dr. Edith Porada, who so competently summarized the archaeological aspects of this meeting.

Prehistoric Congress

The Fifth International Congress of Prehistoric and Protohistoric Sciences will take place in Hamburg, Germany, August 24-30, 1958. The President will be Professor Gerhard Bersu, and the General Secretary Professor Wolfgang Dehn. Besides the week of meetings, there will be one excursion before the Congress and another in the week following. All inquiries concerning the Congress should be addressed to Professor Bersu at Palmengartenstrasse 10-12, Frankfurt am Main, Germany. Since the Seventh Congress of Classical Archaeology is to be held September 6-13 in Rome, it will be possible for those interested to attend both.

Serra Orlando-Morgantina

The excavations sponsored by Princeton University on the site known as Serra Orlando in central Sicily have produced, in the course of the first three campaigns, certain definite clues for the identification of the ancient city. Through the study of the coins found in the excavation and review of the ancient sources, it seems most probable that Serra Orlando is the Morgantine of ancient times. The numismatic evidence, as studied by Mr. Kenan Erim, a member of the expedition staff, was furnished by a series of relatively rare bronze coins bearing the inscription "HISPAN-ORVM." Hitherto, these had been loosely attributed to the rule of Sextus Pompey over Sicily (43-36 B.C.). An episode of the Second Punic War recorded by Livy (xxvi.21.17) relates that the Romans gave the rebellious Sicilian town of Morgantine, or Morgantia, to the Spanish mercenaries who assisted Marcellus in the capture of Syracuse in 212 B.C. The immediate descendants of these Spaniards are probably the people who issued the coins with the legend "HISPAN-ORVM." A large quantity of these coins was discovered in Serra Orlando during and even prior to the excavations. Furthermore, a number of coins of Morgantine itself, struck in the fifth and fourth centuries B.C., was found on the site.

Thucydides, Diodorus Siculus and Strabo, as well as Livy, mention Morgantine in the course of their narratives. According to Strabo, the Morgetes, a people of the Italian peninsula,

crossed over to Sicily in prehistoric times and founded Morgantine. Strabo states, however, that in his day the town no longer existed. This is well supported by the remains of Serra Orlando, which yielded only a few artifacts of the Augustan period. In addition, the topographical information that can be extracted from Diodorus Siculus in regard to Morgantine is very much in favor of its location at Serra Orlando. There is no ground for doubting the accuracy of Diodorus, who was a native of Agyrium, a town in the neighborhood. Previous theories about the location of Morgantine were unsatisfactory, and no one had ever suggested Serra Orlando as a possible candidate for the ancient city. It is hoped that future work will provide even more enlightening discoveries and information about the life and the history of Morgantine.

New Link Between Ape and Man

The following account, adapted from an article by Dr. Pei Wen-chung in the June 1957 issue of *China Reconstructs*, gives the latest information on a type of giant primate first postulated by the well known palaeontologist, G. H. R. von Koenigswald. In an earlier article Dr. Pei reported the recent finding *in situ* of several fossilized teeth of the huge primate, *Gigantopithecus*, in Kwangsi province in South China. A number of questions previously propounded can now be answered.

The discovery of a complete fossilized lower jawbone with twelve teeth belonging to *Gigantopithecus* has enabled us to determine that this huge creature, which lived during the Middle Pleistocene period, had certain characteristics of man but was still primarily an ape. The remains lead us to the hypothesis that the giant's food-gathering ability could not keep up with the development of its enormous body and the species became extinct.

The first *Gigantopithecus* tooth was found by Dr. von Koenigswald among fossilized bones in a Chinese medicine shop. He claimed it to be from "a giant ape" which lived several hundred thousand years ago, and therefore gave it the name *Gigantopithecus*. In a similar manner Dr. von Koenigswald later discovered two more teeth of the same species. The late American anthropolo-

gist, Dr. Karl Weidenreich, considered these human rather than ape, and in 1945 he proposed the name *Gigantanthropus*, giant man. Three questions remained unanswered. What was the habitat of this giant primate? When did he live? Was he a man-ape or an ape-man?

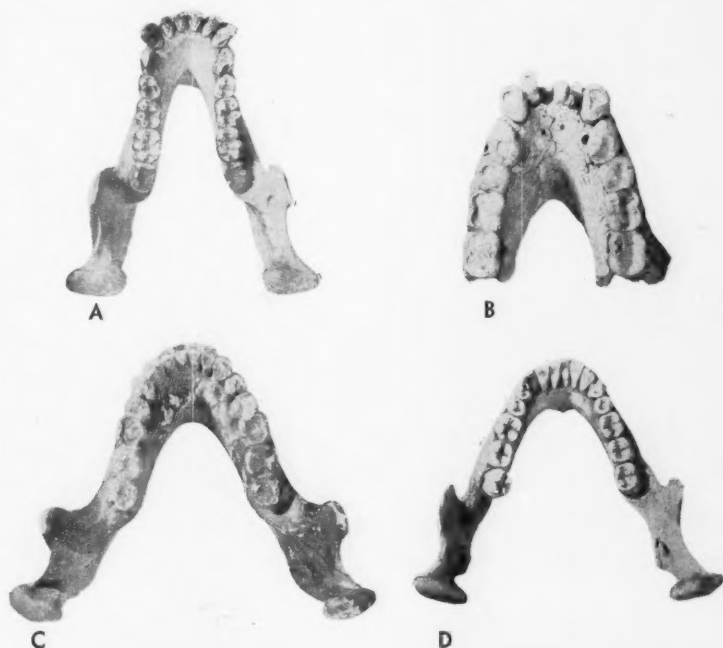
Studies at the Laboratory of Vertebrate Palaeontology of the Chinese Academy of Sciences during 1955 and 1956 on further finds of teeth, particularly from a cave in Tahsin county, Kwangsi, provided definite answers to the first two questions. *Gigantopithecus*' habitat was Kwangsi province; his time was the Middle Pleistocene, 400,000 to 600,000 years ago. But until the discovery of the jawbone we could not answer the third question.

The jawbone was found in the summer of 1956 by a farmer of Liu-cheng, in central Kwangsi, while he was digging earth in a cave in Lengchai Hill. The Laboratory of Vertebrate Palaeontology identified it as the jawbone of *Gigantopithecus* (or *Gigantanthropus*). The Laboratory's field team, which was investigating earlier finds of individual teeth in southwest Kwangsi, immediately transferred its operations to Lengchai Hill.

The site of the new discovery is a "Karst" limestone mound. The cave's two entrances are about 297 feet above ground level. At the bottom of the cave is an accumulation of deposit six to seven feet deep. In the lowest level, where the jawbone was found, were also fossil remains of boar, deer and tapir in great quantities, and a few from elephant and rhinoceros, all fauna of the Middle Pleistocene period, and mostly broken in pieces.

The twelve teeth in the Liu-cheng jaw are smaller than other known *Gigantopithecus* teeth; and as the teeth are well worn, the jaw apparently belonged to an elderly female. In general *Gigantopithecus* teeth are three to four times as large as corresponding human teeth. Both the jawbone and the teeth still show the basic characteristics of the ape, although they have some human tendencies.

Several other huge man-like apes or ape-like men have been discovered in various parts of the world, but all with smaller teeth. Java had an ape-man, *Megantropus*, which was much bigger than the more famous Java Man (*Pithecanthropus erectus*). In South Africa lived another species of man-ape, the *Paranthropus*. The *Gigantopithecus*



Comparison of lower jaws of *Gigantopithecus*, a modern ape, modern man and an extinct species of man. A. Gorilla. B. *Gigantopithecus*. C. Peking Man. D. Modern man.

teeth show fewer human characteristics than the teeth of either of these two. *Gigantopithecus*' lower jaw is much bigger, with the first front molar quite large and more like that of the modern ape than is that of *Paranthropus*. In *Paranthropus*, too, the incisors and canines are smaller and the canines more like the incisors, indicating that it had more human character than *Gigantopithecus*. Since *Paranthropus* is sometimes still considered as a man-like ape, these comparisons strengthen our belief that *Gigantopithecus* was an ape rather than a man. Therefore we must give up the name *Gigantanthropus* and retain the term *Gigantopithecus*.

The Lengchai Hill discovery enables us to come to further conclusions. First of all, the giant lived in caves. The cave was then, as now, in a perpendicular precipice, about the same height from the ground as at present. But then we must explain why the bones of so many animals were also found in the cave. None of the animals found there could have climbed up the precipice. We must discount the theory that they had been washed into the cave by water. The answer is that the animals were carried into the cave by *Gigantopithecus*. Very possibly he took them there to eat them, as the broken pieces seem to show. All the teeth discovered so far indicate that *Gigantopithecus* lived on a diet of both meat and vegetable matter. Apes as we know them are strictly vegetarians, so in this respect *Gigantopithecus* was one step toward being human.

How did the giant hunt these animals? As yet we have not found anything resembling a tool or club. It is very possible that he hunted with his bare hands. The bones found in the

cave were either from young or very old animals, which could have been caught without weapons.

Another problem is whether there is any relationship between the giant ape of Kwangsi and Peking Man. For at almost the same time that *Gigantopithecus* lived in the Kwangsi caves, Peking Man (*Sinanthropus pekinensis*) was dwelling in the caves of North China. The latter, anthropologists generally assert, belonged to the family *Hominidae*, or pre-humans—that is, he was an ape-man. He knew the use of fire and how to make simple stone tools. The ancestor of *Gigantopithecus* lived in the south, where the climate was warm and animal and plant life were plentiful. This abundance of easily obtained food contributed to the creature's enormous growth, but not all his faculties developed at the same rate. His ability to hunt food did not keep up with the development of his enormous body. The ancestor of Peking Man, on the other hand, lived in a much colder and drier climate, where animal and plant life was scarce. After a long period of rigorous experience, by the time of *Sinanthropus*, he had improved his hunting ability by the use of stone artifacts.

Dr. Weidenreich asserted that *Gigantopithecus* was the common ancestor of both *Sinanthropus* and *Pithecanthropus erectus* (Java Man). He based his conclusions, however, entirely on the forms of the fossils, without considering the period in which they lived. If *Gigantopithecus* had lived during the Tertiary period (eleven to sixteen million years ago), his theory might be considered, but since *Gigantopithecus* and *Sinanthropus* lived at about the same time, neither could have been the ancestor of the other.

We can only say that *Sinanthropus* and *Gigantopithecus* were related fairly closely, but the former developed more evenly, while the latter developed unevenly and died an untimely death.

The latest information from the field reports the uncovering of several isolated teeth and another lower jaw, possibly of a young male. It seems that the Liu-cheng cave may yield further finds to teach us more of this man-like ape.

Death of Prominent Scholars

Just before publication of this issue we received news of the death of two outstanding archaeologists, each pre-eminent in his field:

V. GORDON CHILDE, whose studies in the field of prehistory have influenced many archaeologists in both hemispheres (died October 19, 1957, at the age of sixty-five);

ALAN J. B. WACE, celebrated authority on Mycenaean Greece and interpreter of its civilization (died November 10, 1957, at the age of seventy-eight).

New Society for Roman Ceramics

On August 31 and September 1-2 a group of about thirty specialists in Roman ceramics gathered at Baden and Brugg (Aargau), Switzerland, for a conference and for organization into a permanent society consecrated to the promotion of the study of the ceramics of the imperial Roman period in metropolitan Italy and throughout the provinces. Eleven countries were represented by those in attendance, and two more by written reports on the progress of studies in the respective areas. An international society for Roman ceramics was founded, *Rei Cretariae Romanae Fautores Ubique Consistentes (R.C.R.F.)*, with Howard Comfort of Haverford College as President, Elisabeth Attlinger of Zürich as Secretary, and Baron Philippe de Schaetzen of Tongres as Treasurer. Other members of the "comité permanent" include E. Birley (Corbridge), H. Brunsting (Leiden), J.-J. Hatt (Strasbourg), P. Kar-nitsch (Linz), H. Klumbach (Mainz), N. Lamboglia (Bordighera), P. de Palol (Valladolid). It is hoped that a meeting can be held next summer in Italy in connection with the Seventh International Archaeological Congress.

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REVIEWS OF RECENT BOOKS

THE MEANING OF THE DEAD SEA SCROLLS, by A. POWELL DAVIES. 144 pages, 8 plates, 2 maps. New American Library of World Literature, New York 1956 (Signet Key Book) \$0.35

THE DEAD SEA SCROLLS, by J. M. ALLEGRO. 208 pages, 42 plates, 2 maps. Penguin Books, Baltimore 1956 \$0.85

THE DEAD SEA SCRIPTURES in English Translation, by THEODOR H. GASTER. x, 350 pages. Doubleday & Company, Garden City, New York 1956 (Doubleday Anchor Books) \$0.95

It is estimated that since the discovery of the Dead Sea Scrolls over seven hundred books and articles have appeared. The reason for such wide public interest in an archaeological discovery is the suggestion and often the promise made by the early reports, written mostly by laymen, that the Scrolls were to reveal the origin and the early growth of Christianity. It raised the hope that these finds held the secret of the historical Jesus. That these expectations have not been realized is known only to those who deal with the materials. At best the Scrolls contribute to our knowledge of the centuries immediately preceding, and the early epoch during which the Christian movement emerged.

Of the three books under review, each makes a distinct contribution to the subject and each stresses different aspects of the problem.

In *The Meaning of the Dead Sea Scrolls* Dr. A. Powell Davies tells the story of the discovery of the Scrolls in Wadi Qumran, and gives the contents of the texts. His chapter on the dating of the Scrolls presents a fair summary of the opinions of the scholars who participated in the controversy. He concludes that archaeological and palaeographic evidence, as well as radiocarbon dating, place the writing of the Scrolls somewhere between 168 B.C.

and A.D. 233. This does not, however, fix the date of the composition of the texts. A further study of the Qumran community leads him to assume that the people who preserved the Scrolls resemble the early Christian sect. He believes that the Qumran colony is the type of environment where the early Christians could have originated. Finally, he identifies them with the Essenes described by Philo and Josephus. The remainder of the book is a detailed and often convincing treatment of the relationship of the Scrolls to Christian origins. The book ends with a good bibliography and the Philo and Josephus descriptions of the Essenes.

The Dead Sea Scrolls is by J. M. Allegro, a well trained and experienced British scholar. He, too, describes the discovery, the acquisition of the Scrolls, and the further discoveries at Qumran. He holds that Qumran was an Essene colony in which the background for

John the Baptist and Christianity found their origin. His most valuable contribution is the chapter on biblical texts. He presents selections from Samuel, comparing the Qumran version with the Septuagint and the Revised Version. The book has fine maps of the region and photographs of scenes and texts. His index and bibliography are most valuable.

In the introduction to *The Dead Sea Scriptures* Theodor H. Gaster states that his purpose is to give the layman access to translations of the texts themselves, as well as to the "Zadokite Document" discovered in Cairo about half a century ago. He holds that even if we can date these documents by modern methods, the times when these texts were actually composed still remain obscure. Thus any conclusions as to the relation between these texts and the origins of Christianity can at best be tentative. This book is unique in



"Why can't you stumble across some scrolls the way other men do?"

that only about one-tenth of it is devoted to comments and interpretations; the remainder consists of translations of the texts. Those who are familiar with Gaster's translations in his *Thespis* and elsewhere will find these the work of a masterful translator.

These three books may be highly recommended as introductory reading on the Scrolls. They not only cover many aspects of the problem but also give the specialist as well as the layman a good insight into the contents of the actual literature.

I. KEYFITZ

*Missouri School
of Religion*

THE DEAD SEA SCROLLS AND THE BIBLE, by ROLAND E. MURPHY. xi, 119 pages, 4 plates, 1 map. The Newman Press, Westminster, Maryland 1956 \$1.50

Very simply, clearly and judiciously Father Murphy surveys in this admirable little book the story of the discovery of the Dead Sea scrolls, the excavation of Khirbet Qumran and the exploration of the caves, the contents of the scrolls and their contribution to the study of the Old and New Testaments. The account is up to date, including even the discovery of Cave 11 in 1956.

For the Old Testament the significance of the scrolls is in the fact that instead of being dependent upon ancient translations for the reconstruction of the pre-Masoretic text, "we now have several copies of the text itself" which "were made five or six centuries before the Masoretes lived." The scrolls therefore "illustrate the history of the Hebrew Bible" and also "enrich our knowledge of the Hebrew language itself and its sister language, Aramaic."

The importance of the discoveries for New Testament studies lies "in the realm of interpretation," and comes from the works produced by the Qumran community itself. Pointing out in some detail both the resemblances and the radical differences between these documents and the New Testament, Father Murphy finds the importance of the similarities in the fact that "they help us understand the infant church in its Palestinian setting." Common dependence on the Old Testament does not account for these similarities; "these Qumran concepts were current," and they were used and de-

veloped "in such a way that the message of Christianity was expressed in current, meaningful terms." I have not seen this stated better anywhere.

On points of detail one may occasionally differ with Father Murphy, but for essential soundness and effective presentation the book is thoroughly commendable.

MILLAR BURROWS

Yale University

GERMANIC ART DURING THE FIRST MILLENNIUM A.D., by WILHELM HOLMQUIST. 89 pages, 62 plates. Almqvist & Wiksell, Stockholm 1955 (Kungl. Vitterhets Historie och Antikvitets Akademien Handlingar, Vol. 90) Sw. cr. 25

By this very well illustrated and rapid but not superficial survey of the development of pagan Germanic art through a thousand years Dr. Holmqvist hopes to introduce his theme to an international public, and he deserves every success. Much of this art is little known and strange, and much of it barbaric and incoherent, but the strong individuality and the complexity and mastery shown within its conventions make it worth wider study. Even as a background to early mediaeval church art it ought to be much better known.

Growing up outside and on the fringes of the civilized Mediterranean world, Germanic art, like Celtic art six centuries before, drew on various sources to become something different and characteristic. Like Celtic art, too, it subordinated representation to pattern—which should make it more acceptable today—and survives chiefly in the form of ornaments and weapons. As the Christian religion spread through the Germanic countries, the accompanying art of the Mediterranean came into more immediate contact with the earlier art of each country in turn, and gave rise to developments which are only indirectly within the scope which Dr. Holmqvist has set for this book; and because Christianity reached the Scandinavian countries last of all and pagan art lasted longest there, Scandinavian art predominates in it. The importance of the North in the earlier as well as the later, Viking, centuries fully justifies this treatment.

In his highly readable narrative the author gives a clear impression of the growth and content of the successive

styles, and places in their wider contexts such better known masterpieces as the Swedish gold collars, the Sutton Hoo polychrome jewelry and the Oseberg wood carvings. But he does not allow his readers to suppose that everything is understood and agreed. Instead he gives added value and interest to his discussion by stressing controversial points, while giving his own well balanced conclusions; the many references he gives to the extensive but not widely accessible modern literature will unfortunately have to serve more as a reminder of the complexity of archaeology than as a guide to further study.

R. B. K. STEVENSON

*National Museum of Antiquities
of Scotland*

ROMAN SPAIN. An Introduction to the Roman Antiquities of Spain and Portugal, by F. J. WISEMAN. viii, 232 pages, 16 plates, 3 plans, 1 map. The Macmillan Company, New York 1956 \$3.75

This is a guidebook written for the general visitor (there are no notes, references or bibliography) interested in viewing the remains of the Roman age in Spain and Portugal. It is very useful—but it could easily have been even more so.

Wiseman first orients the traveler by summarizing the history of the peninsula under the Romans and by describing the most important types of public buildings. Then he presents a Baedeker-like account of practically all the extant ruins. He winds up with a chapter on Spain's famous sons (misleadingly called "Spain's Contribution to Roman Life and Letters").

The historical survey is good. The Baedeker of Roman monuments is good—as far as it goes, which is just short of a critical point: province by province, town by town, Wiseman lists and describes what there is to find, but does not tell you precisely where to find it. He includes two town plans (Tarragona, Merida); he should have had a dozen, plus maps pinpointing out-of-town sites. To run down a bald reference such as "the now deserted site of Capera, near Oliva, 20 kms. north of Plasencia" (page 149) or "one km. to the west of the town" (Carmona, page 194)—to pick a pair at random—can be ruinous for a traveler; all he can do is cruise about and hope-

An Anglo-Saxon and Celtic Bibliography (450-1087) BY WILFRID BONSER

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fully interrogate every passer-by, a hit-or-miss procedure that can knock a carefully worked out schedule into a cocked hat. Spain is a tough nut for even the casual tourist interested in just getting from place to place: there are no good detailed maps available; the most recent Baedeker is 1913, almost a collector's item today; and until 1952, when the Michelin company put out that godsend, their *Guide d'Espagne*, and Hachette a *Guide Bleu*, it was hard to find main roads, to say nothing of obscure ruins. Wiseman could have solved the problem by including a flock of simple sketch maps and plans; if cost were a factor, the last chapter could have been dropped and half a dozen of the plates could have been omitted, those showing remains pictured in every piece of tourist literature.

I wish I had had this book when I visited Spain and Portugal. I would have seen a good deal more than I did. By all means use it when you go there; but get some maps to go with it—and practise up on your "Donde esta. . ."

LIONEL CASSON

New York University

THE TEMPLES OF KAWA, Part II: History and Archaeology of the Site, by M. F. LAMING MACADAM with chapters by F. L. L. GRIFFITH and L. P. KIRWAN. Two volumes. xxi, 255 pages, 82 figures; xx pages, 21 plans, 112 plates. Published for the Griffith Institute, Ashmolean Museum, Oxford, by Oxford University Press, New York 1955 (Oxford University Excavations in Nubia) \$26.90

These volumes complete the publication of the Oxford University Excavations conducted by the late F. L. Griffith at Kawa (identified as ancient Gematen) in 1929-31 and by L. P. Kirwan in 1935-36. The first part contained the inscriptions. The present volumes describe the temples and houses, analyze the history of the site and give detailed lists of the objects found.

Relatively little was found from early periods up to the time of Amenophis III, and nothing, except possibly the name Gematen, has survived from the Amarna period. The oldest major structure still existing is Temple A, erected by Tutankhamen. Though dedicated to Amon-Re and apparently begun after Tutankhamen's return to Thebes, the reliefs show strong traces

of Amarna style. The subject matter of the scenes is, however, quite conventional.

Little remains from the New Kingdom, after which there is a gap until the time of Shabaka (ca. 716-701 B.C.), who erected a temple to Anubis. Some of its column drums were reused in Temple B.

Taharqa (ca. 689-663 B.C.) was the most extensive builder at Kawa. He erected Temple T, repaired and enlarged Temple A, and possibly built the large altar in the processional way. Temple T exhibits many of the trends that went into the later development of Nubian art. Craftsmen from Memphis worked on it; probably for this reason the reliefs show considerable variety and originality. Some of the scenes were copied from Old Kingdom temples. For instance, the representations of the war with the Libyans are similar, even in such details as the prisoners' names, to corresponding scenes in the temples of Sahure and Pepy II.

In the Hypostyle Hall are depicted four religious processions with unusual representations of musical instruments, some of which are exactly like

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those still used in the Sudan. Other details foreshadow later Napatan and Meroitic developments.

After Taharqa, Kawa gradually declined, the encroachment of sand alternating with the attempts of certain Napatan and Meroitic kings to clear the area and to repair the buildings. The later history of Kawa, until its final burning and abandonment in the fourth century A.D., was elucidated by the excavation of three stratified areas near the temples during the season of 1935-36.

This publication has suffered somewhat from the difficulties occasioned by World War II and from the death of the Griffiths before they could begin to prepare the publication. The records of the 1929-31 excavations were not always complete and the finds were distributed among various museums before Macadam could study them. It is unfortunate that he was unable to examine many of the originals; particularly regrettable is the absence of illustrations of the portable bronze shrine of Amanirenas and Akinidad now in the British Museum.

The results of the excavations in

1935-36 at the three house sites and in front of Temple T are impeccably presented by Kirwan. One might only wish that the plans and sections had been drawn to a somewhat larger scale.

This book will be of value to the specialist. The monuments published here should shed some light on the spread of Egyptian culture to Nubia, its only colonial area.

KLAUS BAER

Oriental Institute
University of Chicago

GREEK PORTRAITS: A Study of their Development, by GISELA M. A. RICHTER. 50 pages, 10 plates. Latomus, Berchem-Brussels 1955 (Collection Latomus, Vol. 20)

These essays are based on the James Bryce Memorial lecture, given at Oxford in June 1954. In her introduction Miss Richter notes the great attraction which Greek portraiture has held for scholars since J. J. Bernoulli's comprehensive scientific *Griechische Ikonographie* (1901). She undertakes to sketch the development of Greek portraiture through originals and copies from Archaic to Hellenistic and Roman times. A bibliography, extensive footnoting, an index of portraits and artists, and a detailed list of illustrations make her observations a permanent bibliographic addition in handy, inexpensive format. The illustrations provide new or more accessible views of old material, often in thought-provoking juxtaposition.

Needless to say, the essays, divided into five chronological chapters, reflect Miss Richter's thought on the development of Greek, Hellenistic, Italo-Etruscan, Ptolemaic and Roman portraiture, as expressed in her numerous works of the past decade. The Ostia Themistocles is seen as a nearly faithful copy of an original of ca. 460 B.C., perhaps executed by an Athenian sculptor working at Magnesia, Lampascus, or possibly Myus. Evaluation of the Menander-Virgil group of portraits suggests that the prototype is Greek rather than Roman, and from present evidence very likely Menander. The so-called Euthydemus, king of Bactria (222-187 B.C.), in the Trolonia collection testifies that "no one can any more ascribe the introduction of realism to Latins, or Etruscans, or Romans." Finally, Miss Richter sug-

gests that all stylistic and numismatic difficulties connected with dating and identification of the "Brutus" at the Conservatori "would be explained if we assumed that the bronze head is an imaginary portrait of L. Junius Brutus, executed by a Greek in Republican Roman times."

A major point of the essays is a statement of the importance of the reconstructions by Hekler, Gullini, Lippold, F. Poulsen and Charbonneaux of statues of Plato, Aristotle, Socrates, Epicurus, Metrodorus and Chrysippus; several of these reconstructions have recently been questioned. Since the Greeks made portrait statues and the later copyist produced more portrait busts or herms than copies of the complete statues, Miss Richter has tried whenever possible to analyze whole statues (in copies) instead of heads alone. The Demosthenes of the Alden Sampson Collection, Smithsonian Institution, Washington (Figures 27f.), mentioned as "unpublished" (page 36), is A. D. Fraser's "A Head of Demosthenes in Washington," *American Journal of Archaeology* 41 (1937) 212-216, Figure 1. This head is also mentioned briefly in *American Journal of Archaeology* 37 (1933) 111, and elsewhere.

CORNELIUS VERMEULE

Museum of Fine Arts
Boston

ARCHAEOLOGIE II, DIE ARCHAEOLOGEN-SPRACHE; die antiken Reproduktionen, by ANDREAS RUMPF. 136 pages, 7 figures, 12 plates. Walter de Gruyter & Co., Berlin 1956 (Sammlung Götschen, Band 539) DM 2.40

The reader of this second volume (for the first, see *ARCHAEOLOGY* 7 [1954] 187) will not only be instructed in the principles of archaeology but will also be amused and amazed by the oddities and incongruities of archaeology and archaeologists. The first part deals with terminology and nomenclature, both ancient and modern, the second with the materials used in ancient art and architecture; this most informative section ought to be more fully documented. The third part, dealing with copies, contains a comprehensive account of archaism and classicism in Greek art, two tendencies which led to the copying of famous Greek statues during the Roman period. The discussion of the copies and the copyists is

based on vast experience and renewed examination of most of the important monuments and problems. A brief index and some well chosen illustrations complete this singularly successful and appealing account.

A. E. RAUBITSCHKE

Princeton University

THE PILTDOWN FORGERY, by J. S. WEINER. xii, 214 pages, 9 illustrations. Oxford University Press, New York 1955 \$3.50

Forgery in archaeology is fortunately far less common than in art, although the temptation to "salt the excavations" as a hoax on the professor has occurred to many a student. Far more serious was the mingling of forgeries with antiquities at Glozel a quarter of a century ago. Now comes irrefutable evidence that the world-famed Piltdown Man (*Eoanthropus dawsoni*) and his culture were the result of deliberate forgery.

It was in 1912 that Charles Dawson, lawyer, amateur geologist and archaeologist, announced to the Geological

Society in London the great discovery of the "Dawn Man of Piltdown." To the credit of scientific enquirers, there has been since that meeting constant doubt about the antiquity of the "Earliest Englishman." Back in 1915 Gerrit Miller of the U. S. National Museum believed that two fossil creatures were represented in the Piltdown remains, one a new form of chimpanzee.

A second, incomplete, calvarium and a molar tooth associated with a fossilized rhinoceros tooth were found in 1915 at nearby Sheffield Park. This second discovery dissolved some of the lingering scepticism, but doubts of the association between the first Piltdown cranium and mandible always remained.

Strangely enough, until a few years ago almost no one seems to have suggested the possibility of forgery. In 1949 Kenneth Oakley applied the Carnot fluorine test, revealing that the date assigned to the Piltdown remains could not be correct because the fluorine content was remarkably low—far less than that of Early Pleistocene mammals. A year earlier F. H. Edmunds had showed that the famed

gravel terrace was far more recent than previously supposed.

Piecing the mosaic together, Weiner leads the reader through a wealth of evidence like a writer of detective fiction. When this is assembled, the reader cannot but be astonished at the lack of critical appraisal shown by some leading anthropologists. For example, detective Weiner locates damning evidence in the handwriting of Dawson's contemporary, Henry Morris, on a labeled flint implement from Piltdown, "Stained by C. Dawson with intent to defraud (all).—H. M." On a card in this same museum cabinet is this note: "I challenge the S(outh) K(ensington) authorities to test the implements of the same patina as this stone which the impostor Dawson says were 'excavated from the Pit!'. They will be found (to) be white if hydrochlorate (*sic*) acid be applied.—H. M. Truth will out." This was written in 1912 or 1913.

Piltdown Man is now removed once and for all from the "Tree of Man." It matters not who perpetrated this gigantic and well planned hoax, but the discredit to prehistory is serious.

THE PAINTED FOOT



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During the third quarter of the 6th century B.C. an Attic vase painter (we think the Amasis Painter from comparison with Achilles' shield on his amphora in Berlin) loved so much the decoration he was executing on a kylix that he decided to paint a procession of protomes of lions and of griffins on the bottom of the foot. As far as we know, this is the first known example of such decoration. The diameter of the foot is 19.3 cm.

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Other evidence for the extreme antiquity of man is apt to be doubted. However, new discoveries in Europe, Africa and Asia will gradually fill in the missing tesserae in the mosaic.

Every student of ancient man should read Weiner's book in order to learn to guard against the pitfalls strategically placed by brilliant forgers.

HENRY FIELD

Coconut Grove, Florida

A HISTORY OF THE GIZA NECROPOLIS, Volume II: The Tomb of Hetep-heres The Mother of Cheops, A Study of Egyptian Civilization in the Old Kingdom, by GEORGE ANDREW REISNER, completed and revised by WILLIAM STEVENSON SMITH. xxv, 107 pages, 147 figures, 55 plates. Harvard University Press, Cambridge 1955 \$25.00

In this work we have the final recording of the late Dr. George Reisner's greatest discovery: the false burial of Queen Hetep-heres, mother of Cheops and ancestress of the royal family of Dynasty IV. This very competent report is compiled from Reisner's field notes by Dr. Smith, and the publishers' claim that it embodies one of the most brilliant achievements of archaeological method is fully justified. To the student who excavates in Egypt it is an invaluable lesson in methods of recording and the presentation of results.

In February 1925 the workmen of the Harvard-Boston expedition uncovered the mouth of an intact shaft situated about 100 meters from the east side of the Great Pyramid of Giza. The shaft (numbered G 7000 X) was cleared of its undisturbed filling and at a depth of more than 30 meters the excavators discovered a tomb chamber

which contained a closed sarcophagus of alabaster, together with the confused remains of funerary equipment, identified from inscriptions as belonging to Hetep-heres. Most of the woodwork of the furniture had disintegrated, leaving only the gold foil and inlay with which it was adorned. Months of painstaking recording followed the discovery of the decayed and shattered objects, and the reader may gain some conception of the magnitude and success of the excavators' task by an examination of Dr. Smith's excellent drawings in Figures 19 and 20.

The restoration of the decayed furniture took many more months, and has been rightly described as a miracle of skill and patience. The restored canopy, bed, chairs, boxes and other objects now exhibited in the Cairo Museum show the supreme value of the discovery, which is now enhanced by the publication of the evidence on which the reconstruction was based. As yet, not all the furniture has been restored and there remain the armchair and the inlaid box shown on Plates 18-24 and Plate 35. We can only hope with Dr. Smith that the technical staff of the Cairo Museum may find it possible to reconstitute them from his admirable drawings. The success of the reconstruction of the curtain box by Haggi Ahmed Yussuf Mustapha shows that this admittedly difficult task can be achieved.

After the removal of all the funerary equipment the alabaster sarcophagus was opened on March 3, 1927, and, to the astonishment of all Egyptologists, found to be empty. This was made even more puzzling by the discovery a few weeks later of the canopic box containing the viscera of the queen. In his review in Chapter I, Dr. Smith presents Reisner's ingenious explana-

tion of the absence of the actual burial, and although plausible in many ways, in the view of the writer it is not entirely satisfactory; there are certain factors which it does not explain. The mystery of the false burial of Hetep-heres must remain until perhaps future research at Dahshur or Giza reveals her real burial place; for shaft G 7000 X was certainly not her original tomb.

The arrangement of this detailed report is excellent and the illustration is adequate, although the absence of colored reproductions of the furniture is a matter for regret. Black and white fail to do justice to the beauty of the curtain box, the canopy, bed and carrying chair, and in the writer's opinion the extra cost in publication would have been justified.

W. B. EMERY

University College, London

HIGHWAY OF THE SUN, by VICTOR W. VON HAGEN. 320 pages, 32 pages of photographs, 4 maps. Duell, Sloan and Pearce, New York—Little, Brown, Boston 1955 \$6.00

To review this book from an archaeological point of view is exceedingly difficult. True, from the author's standpoint it was not so written, but the subject is definitely archaeological and the book is dolled up with certain appurtenances of a scientific work, such as acknowledgments, an index and a bibliography. Since the first two of these are extremely incomplete and the latter is never properly referred to, their importance is questionable.

The Inca Highway Expedition, the progress of which is the subject of the work, was organized to trace (one suspects from a romantic rather than a scientific angle) the routes of the great Inca road system which was the backbone of the Empire's organization. This has been somewhat sketchily done and recorded in substantially the same manner. Copious notes and geographical observations are constantly referred to, but never specifically cited in a form which would aid the serious student of Peruvian geography or archaeology. It is to be hoped that Mr. von Hagen intends to publish, under the auspices of the sponsoring American Geographical Society, a more factual account of the actual findings of the expedition. Otherwise we are faced with a staggering expenditure of time, effort and public-

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ity for results that are, at best, of dubious scientific value.

About the only section of the book which is worthy of specific mention from an archaeological angle is the chapter entitled "The Road to Chachapoyas" and the photographs which relate to it. In this chapter one finds an account of a little known region of Peru and several sites in it which would appear worthy of future study and excavation. One gives promise of being an important Chavín site located in a most logical area. The remainder of the work, written in pedestrian style, is such a mass of factual contradictions, errors and overdramatizations as to be almost useless. There are also glaring omissions, such as an account of the work of the fine archaeologist, Dr. Hans Disselhoff, who accompanied the expedition on a portion of its junkets. His name is even missing from the index.

The quality of the photographs is uniformly good, and in many cases they give a fine idea of the amazing country traversed by the Inca road system. On the other hand (possibly to lend more drama to the account) the maps are not related in any way to the existing communications system, making them hard to follow both for the reader and for anyone who may wish to make further scientific investigation. All in all, a remarkable book.

LOUIS M. STUMER
*Universidad Nacional Mayor
de San Marcos de Lima*

A REAPPRAISAL OF THE FREMONT CULTURE
with a Summary of the Archaeology of the Northern Periphery, by H. M. WORMINGTON. 200 pages, 65 figures, 5 tables, 1 map. Denver Museum of Natural History, Denver 1955 (Proceedings, No. 1) \$3.00

The central concern of this valuable monograph is the nature and history of the Fremont Culture, a little known Pueblo-like complex in Utah and Colorado. The study was undertaken as a result of excavations which Dr. Wormington carried on at the Turner-Look site, in easternmost Utah. The detailed report of this field work is presented in Part I. The site was a small village of nine masonry structures, oval or circular in outline, which had vaulted walls and probably pole roofs. The significance of these structures and the

materials associated with them is summed up in a stimulating and well handled section dealing with the material and non-material culture of the inhabitants.

Part II presents a concise account, area by area and site by site, of archaeological information from the "Northern Periphery"—a not-too-meaningful term used by many Southwestern archaeologists to indicate the state of Utah and its environs. This skilful summarization is another of those for which the author has become so well known. With the summary as a background, the nature and history of the Fremont Culture are treated in detail in Part III. This culture existed in western Colorado and eastern Utah from about A.D. 500 to 1150. Although it was basically agricultural, the agriculture was supplemented by a great deal of hunting. Dr. Wormington believes that this culture rose from the same variant of the basic Great Basin "Desert Culture" as did the Pueblo Culture farther west, but developed different characteristics because of a different environment and, in some degree, a different history. Both Fremont and Pueblo cultures were influenced by San Juan Anasazi. They appear to be two examples of the several agricultural complexes—of which Anasazi and Hohokam are better known examples—which developed from the Desert Culture base as a result of cultural stimuli from Middle America.

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A most interesting problem concerns the corn found in Fremont Culture sites. It is a high-row Mexican dent corn unlike that of the Anasazi peoples. The author suggests that this Fremont corn represents the first agricultural wave to spread north from Mexico, and that it was later superseded in Arizona and New Mexico by other types of corn.

The ultimate fate of the Fremont Culture is obscure. Dr. Wormington conjectures that increasingly dry conditions drove the Fremont people south, where they were eventually taken into the Anasazi population, possibly in the Hopi country.

This book belongs in the library of every student of North American prehistory. It provides a concise and effective synopsis of the current information from an important area, and it is full of provocative suggestions.

E. MOTT DAVIS
University of Texas

GENEZA TROPAIONU, by ZOFIA GANSINIEC. 158 pages, 38 figures. Polskie Towarzystwo Archeologiczne, Warsaw 1955 (Biblioteka Archeologiczna, Volume 5)

This is a well documented and (to judge from the French summary) competent study of the origin and history of the *Tropaion*, with an extensive excursus on the early form of the *Pal-ladion*; the various other types of

victory monuments, both Greek and Roman, are also treated. It seems that the battlefield *tropaion*, consisting of enemy armor hung on a tree trunk, was created by Miltiades after the victory of Marathon. Other *tropaia* were erected by the Athenians during the Persian Wars and by Kimon after his victories over barbarians and Greeks. During the Peloponnesian War the custom of erecting *tropaia* on the battlefield became general. The question may be asked whether we have here an Oriental, perhaps Persian, custom which Miltiades initiated after his victory over Datis and Artaphernes.

ANTONY E. RAUBITSCHKE
Princeton University

NEW INTERPRETATIONS OF ABORIGINAL AMERICAN CULTURE HISTORY. 75th Anniversary Volume of the Anthropological Society of Washington. viii, 135 pages, 5 figures, 2 tables. Washington, D. C. 1955 \$1.00.

This volume consists of a series of coordinated lectures presented before the Society. The orientation is primarily toward the contributions of archaeology, although two of the papers, solicited later to cover topics not handled by the speakers, are only peripherally so. The subjects or areas are: the Paleo-Indians, the eastern United States, the interrelations of Middle and South America, the southwestern United States, the Northwest Coast, northeastern South America, the problems of Asiatic-American relationships, linguistics and the reconstruction of culture history, and a summary and theoretical appraisal. The authors are, respectively, Drs. Eiseley, Spaulding, Willey, Reed, Drucker, Evans, Ekholm, Trager and Meggers. For all that a varying degree of anthropological or archaeological sophistication is assumed to be possessed by the reader, any educated layman could doubtless read the papers with comprehension and profit.

The contribution made by this volume is to provide neat summaries of some current thought about rather complicated subjects. Most of the interpretations would meet with substantial agreement by other New World archaeologists and culture historians. The one exception would certainly be Dr. Ekholm's paper, which would be criticized by many Americanists.

The last two papers, by Drs. Trager and Meggers, are to this reviewer the

most interesting of the series. They deal with methodological and theoretical problems and might be read with profit by anthropologists and archaeologists of whatever persuasion. Dr. Meggers' contribution, based on comparisons with attitudes in the model, physical, sciences, tends to put anthropological theory—a matter for much useless controversy in an essentially pragmatic field—in its proper light.

ROBERT F. G. SPIER
University of Missouri

LULLINGSTONE ROMAN VILLA, by Lt.-Col. G. W. MEATES, F.S.A. xvi, 168 pages, 13 figures, 47 plates. William Heinemann Ltd., London 1955 21 s. (Essential Books, Fair Lawn, New Jersey \$3.40)

Would you like to "dig"? But how does one know where to begin, and how does one go about it? A good many books have appeared recently explaining the techniques of archaeology. The best way to learn is by doing—under the guidance of an experienced and competent excavator.

The book here reviewed is not a professed manual, but it does take the reader by the hand and show him how an actual excavation was planned and carried out, step by step. And it is fascinatingly written in an easy, graphic—but not sensational—style which gives one almost the thrill of personal discovery.

We follow the chain of clues which led to the finding of the villa. We learn how to lay out a "grid," and presently we arrive at a remarkable mosaic floor, of the fourth century A.D., with scenes of Europa and the Bull, Bellerophon and the Chimaera, and the Four Seasons—"Spring" with a swallow perched on her shoulder! After discussing in lively fashion who laid this floor and how, the chapter ends with the tale of a mole whose burrowing long ago beneath the pavement could be traced, but "no point of egress was found. Perhaps this mole still lies, a little skeleton, beneath the Roman floor."

As so often happens, after this initial whetting of the appetite much tedious routine digging lay ahead. The villa was rebuilt several times, with more or less radical changes, between its construction about A.D. 100 and its

final putting to the torch by the barbarians some three hundred years later. The deciphering of this story required patience and careful scrutiny of every clue, but the author carries the tale along in a way that will satisfy both the professional and the interested layman. Excellent photographs, numerous diagrams and a "Table of Events" help to keep the story straight.

An important and, in a villa, rare find was a pair of excellent marble portrait-busts perhaps of one-time owners of the villa. But the most significant discovery—indeed unique of its kind—was the evidence for Christian worship in the last stage of the villa, about A.D. 350-400. Attention to unpromising-looking fragments of plaster paid off, and tedious jigsaw-puzzle work revealed that the walls of the main room or chapel were adorned with figures (more interesting than beautiful!) in attitudes of prayer against a painted architectural background, and with large wreaths containing the familiar Chi-Rho Christian symbol.

Much of the work in such English excavations is done by enthusiastic amateurs under competent supervision. Although an American Indian site is not likely to produce such spectacular results, the fascination of discovery and the thrill of expectancy are not lacking, and it is encouraging to note that many Americans too are beginning to take a lively interest, through research and excavation, in obtaining a better understanding of the history of the native peoples of their own country. For them especially the "Lullingstone Roman Villa" should make interesting reading.

J. WALTER GRAHAM
University of Toronto

PIECING TOGETHER THE PAST: The Interpretation of Archaeological Data, by V. GORDON CHILDE. vii, 176 pages, 4 figures. Frederick A. Praeger, New York 1956 \$3.95

A number of recent books, such as Kathleen Kenyon's *Beginning in Archaeology*, have acquainted readers with the refinements in field techniques that have taken place in the last fifty years. Until now, however, there has been little opportunity to learn about the tedious and exacting work which occupies the lengthy period after the



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archaeologist comes in from the field and before he puts together his final report. Now Professor Childe has written a detailed statement of the procedures which are brought into play during this all-important part of the archaeologist's work. For here is a critical stage in the process: the translation of the raw data, as obtained by disciplined field techniques, into valid inferences concerning human behavior patterns, historical processes and the functioning of past cultures. Working from well grounded principles of cultural dynamics, Dr. Childe shows how the archaeologist must weigh his information, how he may make limited inferences as to the functions of artifacts, how he classifies the materials into types and the types into cultures, how he orders the cultures into time sequences, and how he establishes the nature of the relationships between the cultures.

This book should become standard assigned reading in academic courses on archaeological techniques and methods. It deserves to reach a large lay audience as well, because of the insight it gives into the intellectual

processes which have led to our present knowledge of prehistory. Student and layman alike will gain from this book a healthy skepticism toward the glib historical inferences drawn in many popular, and not a few technical, books. At the same time readers will be impressed by the great amount of valid historical reconstruction which may be accomplished through the cautious interpretation of materials.

Americanists will regret that this book, in common with many of the excellent British volumes on general archaeology which have appeared in recent years, ignores work done in America. We would benefit from knowing Professor Childe's opinion of the Midwestern Taxonomic System, which has so strongly influenced work in the eastern United States, or of the concept of area co-tradition now being critically examined in Peru and the Southwest. Archaeology seems sadly provincial when a work as widely read as this one is sure to be has no mention of such influential concepts.

It is particularly appropriate that Dr. Childe should have written this general study, since his interpretative works have become classics in the field. *Piecing Together the Past* is, in sum, a detailed statement by a master of the basic principles of organizing and interpreting archaeological data. These principles cannot be found brought together in any other readily available book.

E. MOTT DAVIS

University of Texas

PRÉHISTOIRE DE L'AFRIQUE DU NORD. *Essai de chronologie*, by LIONEL BALOUT. vii, 544 pages, 29 figures, 72 plates. Gouvernement Général de l'Algérie, Direction de l'Intérieur et des Beaux-arts, Service des Antiquités. Arts et Métiers Graphiques, Paris 1955

This encyclopedic critique, summary and progress report on the Palaeolithic, Mesolithic and Neolithic of Tunisia, Algeria and Morocco appears at a moment of flux in research there which curiously parallels political events. Objective field work has been gradually justifying a growing independence from preconceived European-based ideas, perceiving its own raw materials as they are, not as tradition says. Balout can show successive outside stimuli, developments in isolation, retardations

and unequal penetrations creating material culture provinces with individual traits in obvious contrast to Europe. A decade's service on the scene as administrator, teacher, author, field and laboratory man gives him undoubted authority and the right to occasional axe-grinding in a still obscure field.

To be informed on this subject one ought resolutely to digest much or all of this book. It is not for quick reference. One needs time and rat-like cunning to reach all the author has to say in a discursive labyrinthine text. He presupposes knowledge of prehistory and compresses immensely detailed evidence into a volume the size of a large city directory. In this barely tolerable compass he treats only sites which contribute positively to defining the character, distribution or age of the different industries. Its first third is a Dutch Uncle lecture on properly establishing geological, botanical, palaeontological bases for chronology. Clearly and carefully he pleads the strengths and shortcomings of each, the need for clear terminology, definition, and dealing as far as possible with ensembles, not isolated items. He lists and interprets dishearteningly fragmentary data with sites and summary tables for each category. The last two-thirds is a description of industries and key sites, covering early viewpoints, contexts, typology, evidence for sequence, interplaying influences.

The essay's rules preclude probing often or far into inland Sahara or east of the artificial line at Libya. Inevitably Balout draws considerably on Algeria and his own experience. Major traits in the area's prehistory are: (1) the special African character of the Lower Palaeolithic; (2) the apparent virtual absence (here is an axe a-grinding) of a truly non-Aterian Levallois-Moustesian; (3) the newly detected role of the Iberomaurusian as at least partially pre-Capsian and a less derivative, older, more deeply rooted, greatly varying tradition than once thought. The Neolithic and its art get short shrift.

Distribution maps, sections, plans and photographs are most instructive, especially the last on the appearance of sites and textures of deposits. They also show Lower Palaeolithic typology very well, Middle and Later Palaeolithic adequately, with not all varieties of Aterian shown, probably due to overdependence on Bardo collections. The monotonous Iberomaurusian and Cap-

sian are, perhaps rightly, very skimpily shown; but one expects more on the former in view of its new role. A magnificent bibliography of over one thousand items makes no claim to be exhaustive, favors recent works and omits the protohistoric.

Peabody Museum
Harvard University

BRUCE HOWE

THE ROYAL CEMETERIES OF KUSH, Volume II, Nuri, by DOWS DUNHAM. xxvii, 300 pages, 216 figures, 141 plates, 3 charts, 1 map. Museum of Fine Arts, Boston 1955 \$32.50

For centuries ancient Egypt dominated the land of Kush, the upper Nile valley from the Wadi Halfa to Khartoum, deriving thence slaves, gold and ivory. In the period of Egyptian decline, however, the situation changed. About 730 B.C. Egyptianized rulers of Kush invaded Egypt, where five of them ruled as the Twenty-fifth Dynasty. The last king, Tanwetemani, was driven out by the Assyrians in 663

B.C. Although in the north the Saite dynasty took power, in the south Tanwetemani and his successors ruled the independent kingdom of Kush. The sixty-five generations of Kushite kings and the development of their hybrid culture have been reconstructed by the Egyptian Expedition of Harvard University and the Museum of Fine Arts at Boston. Between 1916 and 1923 six royal cemeteries were excavated.

This volume publishes the finds at Nuri. The seventy-three tombs dug there, ranging from Generation 5 (Taharqa, 690-664 B.C.) to Generation 26 (Nastasen, ca. 328-308 B.C.), include the monuments of nineteen kings and the graves of their queens and other womenfolk. Most of the royal tombs are slender pyramids of stepped sandstone masonry, each with an oblong chapel against the eastern face. In front of the chapel, stairs lead underground to a rock-cut burial chamber. The focal point for funerary ceremonies was an inscribed stela, usually showing the king adoring Osiris, in the east wall of the chapel. Although the chapels were largely destroyed, there are remains of funerary

scenes and texts on their walls and in some of the burial chambers. Texts and vignettes cover the sides of the two stone sarcophagi found.

The bulk of the book consists of descriptions of the architecture and inventories of the tombs. The material is arranged in chronological order. Despite extensive plundering, thousands of objects were recovered. Particularly outstanding are the silver cylinder sheaths with elaborate incised designs. In addition to the arrangement by tomb group, it is most useful to have the finds arranged by categories in the plates (some of which show the indistinct detail and blurring of darker areas that unfortunately afflict many offset reproductions). Conspectuses of the types of objects in foundation deposits and their chronological distribution, and of the types of architectural elements and burial arrangements are given in skilfully arranged pictorial charts.

Mr. Dunham has presented a tremendous mass of detail with outstanding clarity. His book provides primary source material of great importance. On the technical side, the grave groups

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Early application is urgently advised.

should help to date precisely comparable materials found in Egypt. From a general point of view, the Nuri finds provide an impressive picture of cultural diffusion, of the far-reaching Egyptianization of Kush during the seventh to the fourth centuries B.C.

HELENE J. KANTOR

Oriental Institute
University of Chicago

THE MOUNTAINS OF PHARAOH, by LEONARD COTTRELL. xvii, 285 pages, 35 plates, 8 diagrams. Rinehart & Company, New York 1956 \$5.00

There are few tales of adventure so full of excitement and suspense as those to be extracted from the history of archaeology. Some of the most dramatic are to be gleaned from the long history of pyramid exploration. It is these that are the subject of Mr. Cottrell's latest book on Egyptology.

In spite of the publisher's statement on the jacket, which hails the author as "an outstanding British archaeologist" and "an eminent English Egyptologist and scholar," I am sure that

Mr. Cottrell himself would make no claim to scholarship: indeed, his book is full of sly digs at the dullness, the quarrelsomeness and the general fustiness of Egyptologists. Mr. Cottrell is a journalist with a commendable enthusiasm for ancient Egypt and an enviable gift for interesting the public.

Just because his book is intended for the intelligent layman, it is a pity that it is so carelessly written and edited. To list the inaccuracies and half-truths with which it bristles would require more time and space than, frankly, it is worth. Quite aside from misstatement of fact, I have rarely seen a more slovenly job of editing. References given are incomplete and garbled. To mention only a few, *A History of Egypt* is twice credited to Charles Breasted instead of James Henry Breasted; German titles are fantastically misspelled; and the great Erman, who invariably signed his works "Adolf" or simply "A. Erman," is referred to as Johann (it is true that he was christened Johann Peter Adolf, but who save a librarian knows that!). As for place names and Egyptian personal names, hard enough at best for

the layman to grasp or remember, they vary erratically in spelling from one page to the next.

It is possible that the book will interest the public for which it is intended. Your reviewer (perhaps tainted with the quarrelsomeness Mr. Cottrell attributes to Egyptologists) finds it rather dull, perhaps chiefly because the author has tried to introduce a sort of cops-and-robbers suspense into an account that is sufficiently dramatic without such a cumbersome theatrical device. Dull, and excessively irritating in its nagging false emphasis and inaccuracy. I am annoyed by such things as the attempt to titillate the public by dwelling on the ancient legendary scandal concerning an incestuous and pandering Cheops, and a certain sly anti-Semitism in references to early relations between Israel and Egypt. As for inaccuracies, I have listed several pages of them, and feel certain that I might double the list. But I shall spare the readers of *ARCHAEOLOGY*—and Mr. Cottrell.

In spite of its errors, and in spite of the author's infuriating condescension toward the explorers, historians and

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scholars who made his compilation possible, the book may convey to the uncritical reader something of the high adventure of archaeology. While it has little in it that is new and leans rather too heavily on certain sources, it at least gathers into a single volume an outline of the history of pyramid exploration from antiquity down to the present.

An index would have been helpful, and indeed might have been the means of catching and correcting many of the confusing inconsistencies in the text.

ELIZABETH RIEFSTAHL

South Essex, Massachusetts

THE TESTIMONY OF THE SPADE, by GEOFFREY BIBBY. xviii, 414, x pages, 61 drawings, 32 plates, 11 maps. Alfred A. Knopf, New York 1956 \$6.75

In this excellent book Mr. Bibby has set out to interpret European prehistory to the public for whom C. W. Ceram wrote his epitome of discovery in *Classical Lands and the Ancient Near East—Gods, Graves and Scholars*. The same ignorance and prejudice that caused Greek and Roman to scorn the barbarian (here Bibby is a little unfair; much of the pejorative sense of the word is comparatively modern) he suspects in the general reader of today, and he aims to make such names as Worsaae, Montelius and Rust as generally known as Schliemann, Carter and Woolley.

The story of prehistory in Europe is told in terms of the archaeological exploration of each epoch, with the aid of biographical sketches of the protagonists. Some are particularly delightful. In these days one may feel a pang of romantic envy for the gastronomic pleasures and gusty fellowship of Worsaae's association with the archaeologist-king, Frederik VII of Denmark; and the example of Alfred Rust, excavator of the reindeer-hunter sites of Meiendorf, and Stellmoor, who conducted successive digging seasons in the Syrian rock-shelters of Jabrud on a negligible pittance, bicycling the whole distance to and from Hamburg, is a reproach and inspiration to us weaker brethren.

Bibby, though an Englishman, has long worked in the museum of Aarhus in Denmark and is thus able to appreciate the preeminence of the Danish

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prehistorians. Appropriately, his book begins by honoring Christian Jürgensen Thomsen, father of European prehistory and creator of its threefold structure of Stone, Bronze and Iron ages.

There follow accounts of the intellectual battles of the nineteenth century, when the true implications of the association of man-made objects with the bones of extinct animals were first realized, and of recent Palaeolithic discoveries. The gap that slowly yawned between the artifacts of Palaeolithic man and the material Thomsen had classified was filled by the identification of the hunter-fisher cultures of the tundra that fringed the retreating ice; the story of their discovery forms the second part of the book.

The remaining half of the volume covers European prehistory from the Neolithic to the Viking Age, and selection has had to be drastic; it is nevertheless judicious. One is made aware of the intellectual adventure of the discoveries as well as of the constantly improving techniques that made their ever fuller interpretation possible. The importance of technique is emphasized in "interlude" chapters on the work in geochronology associated with de Geer, von Post and Libby and on the development of precision in excavation recording exemplified by the pioneer work of Pitt-Rivers.

The publishers have not done the book full justice. To European eyes it has an old-fashioned aspect which suggests that the subject has just that

stuffiness the author successfully dispels. The photographs are good, and one could wish for more of them, especially as the line drawings are inadequate as illustrations and at the same time lack the charm of Victorian vignettes. The maps leave much to be desired. A post-glacial time-scale would have been valuable. These are small criticisms of a book which deserves to be widely read by amateur enthusiast and modest professional alike.

JOHN EAMES

University of Liverpool

BRIEF NOTICES

DEAD TOWNS AND LIVING MEN, Being Pages from an Antiquary's Notebook, by SIR LEONARD WOOLLEY. 220 pages, 15 plates. Philosophical Library, New York 1956 \$6.00

A re-issue of a well known volume by one of archaeology's first popularizers. There are some additions and a few changes; the book still makes entertaining reading.

PRIMITIVE ART, by FRANZ BOAS. vii, 378 pages, 308 figures, 15 plates. Dover Publications, New York 1955 \$1.95

This reproduction of the classic volume, *Primitive Art*, is taken from the edition put out by Capitol Publishing Company, Irvington-on-Hudson,



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N. Y., in 1951; they are identical in every respect, except that now the table of contents has been put in front and a five-page index has been added. All the reprintings go back to the original edition of 1927, which has never been changed in any way.

ERHALTUNG UND WIEDERHERSTELLUNG VON BODENFUNDEN: Gebrannte Tongegenstände, Gefässe und Ziegel, by GUSTAV MAZANETZ. 79 pages, 31 figures. Verlag für Jugend und Volk, Vienna 1955 (Wiener Schriften, Vol. 3)

This little handbook gives useful hints for the treatment of pottery found in excavations. Photographs show step by step how mending and restoration are properly done.

TWENTY-FIVE YEARS OF MESOPOTAMIAN DISCOVERY (1932-1956), by M. E. L. MALLOWAN. 80 pages, 18 figures, 3 plates, 1 map. British School of Archaeology in Iraq, London 1956. 5s.

The excavations of the British School of Archaeology in Iraq cover most of the important periods in Assyrian archaeology, and this little pamphlet commemorating the School's silver anniversary summarizes the results. Arpachiyah, a purely prehistoric site, yielded some very fine Halaf period material. Chagar Bazar, Brak and several sites on the Balikh River were settled from prehistoric times down

into the second millennium and are particularly interesting as representatives of the periphery of Mesopotamian culture. The Late Assyrian site of Nimrud, still in process of excavation, has already produced much valuable material, especially a notable series of ivories. Professor Mallowan gives an authoritative and well written account of excavations which he has conducted.

L'AFRIQUE ROMAINE. 128 pages, 52 plates. Gouvernement Général de l'Algérie, Direction de l'Intérieur et des Beaux-Arts, Service des Antiquités, Algiers, 1955

A general account of Roman Africa first published in 1949 and now reprinted. The generous sprinkling of photographs, including two stunning air views, alone makes this little book worth owning.

AQUILEIA E GRADO, Guida Storico-artistica, by GIOVANNI BRUSIN. Fourth edition. 263 pages, 151 illustrations, 6 plates. Tipografia Antoniana, Padua 1956 1200 lire

Aquileia and Grado possess outstanding importance for their riches in Late Classical and Early Christian antiquities, as well as mediaeval monuments. This attractive little volume is far more than the usual "guide," for it sums up the results achieved by its distinguished author during many years of investigation.

I CAPITELLI ROMANI DELLA VENEZIA GIULIA E DELL' ISTRIA, by VALNEA SCRI-NARI. 51 pages, 21 plates. Centro Nazionale di Storia dell' Architettura, Rome 1956 1200 lire

Planned as the first instalment of a *corpus* of Roman column capitals; successive fascicules are to be devoted partly to the capitals existing in the several regions of Italy, partly to those in outstanding centers such as Tarentum, Pompeii and its neighbors, and the Palatine and Roman Forum.

The capitals here presented are of Roman imperial date, and their relative frequency reflects the vicissitudes of building activity in this region; with the exception of one example of the Ionic order which had apparently been reused in the basilica at Trieste, they are all either normal Corinthian, or characterized by vegetal volutes, or of the composite variety.

MUIR'S ATLAS OF ANCIENT AND CLASSICAL HISTORY, edited by GEORGE GOOD-ALL and R. F. TREHARNE. 2nd edition. 8 pages, 4 figures, 20 plates of maps, 8 pages of index. Barnes and Noble, New York 1956 \$2.00

Twenty pages of maps cover the ancient world from the fifteenth century B.C. to A.D. 400. This handy atlas is reasonably priced and clearly printed. One might wish for larger maps of some of the cities, which are so small as to be confusing.

HISTORICAL ATLAS, by WILLIAM R. SHEPHERD. 8th edition. xii, 226 pages, 115 pages of index. Barnes and Noble, New York 1956 \$12.50

A useful reference book, reprinting the seventh edition, with eight supplemental maps for the period 1929-1956. A relatively small proportion of the information is out of date. Some of the maps are difficult to read because of the offset process used.

FIVE YEARS OF COLLECTING EGYPTIAN ART 1951-1956. vi, 64 pages, 96 plates, frontispiece in color. The Brooklyn Museum, Brooklyn, New York 1956 \$3.50

This magnificently illustrated and documented catalogue is a tribute to the curatorial acumen of Dr. John D. Cooney and his associates, and our

thanks are due to them and to the Charles Edwin Wilbour Memorial Fund for making the volume available at a fraction of its cost. Many of the objects are already familiar through sales catalogues, and several of the magnificent reliefs were formerly in the collection of the Metropolitan Museum. The great majority of the pieces, however, make their scholarly debut in this catalogue. The Middle Kingdom sphinx head on plates 7-10, a sculpture first "discovered" by Mr. Albert Gallatin in London, ranks as one of the finest Egyptian objects in an American museum. The informative text is a model of clarity.

COME RITROVAI L'ANTICA STABIA, by L. D'ORSI. 43 pages, 24 plates. Editrice Rinascita, Naples 1956 600 lire

An unconventional and very readable narrative by the local schoolmaster, whose enthusiasm led to the resumption of scientific excavation at Stabiae. The wall paintings of the villas have already won recognition for their striking artistic qualities.

THE AES COINAGE OF GALBA, by C. M. KRAAY. x, 125 pages, 37 plates. The American Numismatic Society, New York 1956 (Numismatic Notes and Monographs, No. 133) \$5.00

An able treatise on the bronze coinage of the brief reign of Galba, which embodies the results of a laborious search for die-links and an exacting analysis of hoards to discover the elaborate organization of the mint of this period. A catalogue of dies, indexes and adequate illustrations add to the reference value of this monograph.

UGARITICA III, by CLAUDE F.-A. SCHAEFFER. With contributions by CHR. DESROCHES-NOBLECOURT, H. S. GÜTERBOCK, P. KRIEGER, E. LAROCHE, O. MASSON, J. VANDIER. vi, 302 pages, 242 figures, 11 plates. Librairie Orientaliste Paul Geuthner, Paris 1956 (Mission de Ras Shamra, VIII) 4000 frs.

Like its predecessors, this volume of *Ugaritica* comprises a series of independent studies, though in this instance three of the four are related in their general subject—the relations of

Ugarit with various provinces of the Near East. These first three chapters discuss materials for the study of relations between Ugarit and the Hatti, Ugarit and Egypt, and Ugarit and Cyprus. The volume closes with a fourth chapter totally divorced from the others: it is the first part of the corpus of bronze tools and weapons from Ugarit. Here again are the same full and beautifully illustrated accounts of small but very important sections of the Ras Shamra finds.

WATER INTO WINE. A Study of Ritual Idiom in the Middle East, by E. S. DROWER. xvi, 273 pages, 24 figures, 18 plates, frontispiece. John Murray, London 1956 25s.

In this comprehensive and fascinating study of ritual meals as practised today among various peoples and religions of the Near and Middle East, Lady Drower presents the results of her patient and scientific investigation of a special type of ritual pattern which has come down from ancient times in this area.

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